Publications list Edzer Pebesma

February 22, 2024

Contents

1 International journals

1. Vitor C. F. Gomes, Gilberto R. Queiroz, Karine R. Ferreira, Edzer Pebesma, Claudio C. F. Barbosa, 2024. Brazil Data Cube Workflow Engine: a tool for big Earth observation data processing, International Journal of Digital Earth, 17:1.

2. Lukas Mogge, Morag McDonald, Christian Knoth, Henning Teickner, Myagmartseren Purevtseren, Edzer Pebesma, Kati Kraehnert, 2023. Allocation of humanitarian aid after a weather disaster. World Development, Volume 166, published online

3. Marvin Ludwig, Alvaro Moreno-Martinez, Norbert Hölzel, Edzer Pebesma, Hanna Meyer, 2023. Assessing and improving the transferability of current global spatial prediction models. Global Ecology and Biogeography, published online.

4. Luca Kleinewillinghöfer, Pontus Olofsson, Edzer Pebesma, Hanna Meyer, Oliver Buck, Carsten Haub and Beatrice Eiselt, 2022. Unbiased Area Estimation Using Copernicus High Resolution Layers and Reference Data. Remote Sensing 14 (19), 4903

5. Hanna Meyer, Edzer Pebesma, 2022. Machine learning-based global maps of ecological variables and the challenge of assessing them. Nature Communications volume 13, Article number: 2208 (2022)

6. Carles Milà, Jorge Mateu, Edzer Pebesma, Hanna Meyer, 2022. Nearest Neighbour Distance Matching Leave-One-Out Cross-Validation for map validation. Methods in Ecology and Evolution 13 (6), 1304-1316 (open access).

7. Johannes Heisig, Edward Olson, Edzer Pebesma, 2022. Predicting Wildfire Fuels and Hazard in a Central European Temperate Forest Using Active and Passive Remote Sensing. Fire, 5(1), 29

8. Hanna Meyer, Edzer Pebesma, 2021. Predicting into unknown space? Estimating the area of applicability of spatial prediction models. Methods in Ecology and Evolution 12 (9), 1620-1633 (open access).

9. Matthias Schramm, Edzer Pebesma, Milutin Milenković, Luca Foresta, Jeroen Dries, Alexander Jacob, Wolfgang Wagner, Matthias Mohr, Markus Neteler, Miha Kadunc, Tomasz Miksa, Pieter Kempeneers, Jan Verbesselt, Bernhard Gößwein, Claudio Navacchi, Stefaan Lippens, Johannes Reiche, 2021. The openEO API - Harmonising Use of Earth Observation Cloud Services Using Virtual Data Cube Functionalities. Remote Sensing, 13(6), 1125. (open access)

10. Daniel Nüst, Edzer Pebesma, 2021. Practical Reproducibility in Geography and Geosciences. Annals of the American Association of Geographers, 111 (5) (preprint).

11. Marius Appel, Edzer Pebesma, 2020. Spatiotemporal Multi-Resolution Approximations for Analyzing Global Environmental Data. Spatial Statistics 38, (open access)

12. Christian Knoth, Henning Teickner, Thomas Bartoschek, Kati Kraehnert, Melinda Vigh, Myagmartseren Purevtseren, Munkhnaran Sugar, Edzer Pebesma, 2020. Patterns in Mongolian Nomadic Household Movement Derived from GPS Trajectories. Applied Geography, 122 (open access).

13. Marius Appel, Edzer Pebesma, 2019, On-Demand Processing of Data Cubes from Satellite Image Collections with the gdalcubes Library. Data 4(3), 92

14. Sören Gebbert, Thomas Leppelt, Edzer Pebesma, 2019. A Topology based Spatio-Temporal Map Algebra for Big Data Analysis. Data 4(2) 86

15. Victor Maus, Gilberto Câmara, Marius Appel and Edzer Pebesma, 2019. dtwSat: Time-Weighted Dynamic Time Warping for Satellite Image Time Series Analysis in R. Journal of Statistical Software 88 (5) 1-31.

16. Fernando Santa, Roberto Henriques, Joaquín Torres-Sospedra, Edzer Pebesma, 2019. A statistical approach for studying the spatio-temporal distribution of geolocated tweets in urban environments. Sustainability 11(3), 595.

17. M. Smid, S. Russo, A.C. Costa, C. Granell, E. Pebesma, 2019. Ranking European capitals by exposure to heat waves and cold waves, Urban Climate, Volume 27, 2019, Pages 388-402.

18. Iñaki Ucar, Edzer Pebesma, Arturo Azcorra, 2018. Measurement Errors in R. The R Journal, 10 (2), 549–557.

19. Shivam Gupta, Auriol Degbelo and Edzer Pebesma, 2018. Connecting Citizens and Housing Companies for Fine-grained Air-Quality Sensing GI_Forum 2018, Volume 6, Issue 2, 275–293.

20. Shivam Gupta, Edzer Pebesma, Auriol Degbelo and Ana Cristina Costa, 2018. Optimising Citizen-Driven Air Quality Monitoring Networks for Cities. ISPRS Int. J. Geo-Inf. 2018, 7(12), 468 (open access)

21. Edzer Pebesma, 2018. Simple Features for R: Standardized Support for Spatial Vector Data. The R Journal 10:1, 439-446.

22. Meng Lu, Marius Appel, Edzer Pebesma, 2018. Multidimensional Arrays for Analysing Geoscientific Data. ISPRS Int. J. Geo-Inf. 2018, 7(8), 313 (open access).

23. Ibarra-Espinosa, S., Ynoue, R., O'Sullivan, S., Pebesma, E., Andrade, M. D. F., and Osses, M., 2018. VEIN v0.2.2: an R package for bottom–up vehicular emissions inventories, Geoscientific Model Development, 11, 2209-2229, https://doi.org/10.5194/gmd-11-2209-2018, 2018.

24. Christian Knoth, Sofian Slimani, Marius Appel, Edzer Pebesma, 2018. Combining automatic and manual image analysis in a web-mapping application for collaborative conflict damage assessment. Applied Geography 97, 25-34 (pdf).

25. Shivam Gupta, Edzer Pebesma, Jorge Mateu and Auriol Degbelo, 2018. Air Quality Monitoring Network Design Optimisation for Robust Land Use Regression Models. Sustainability 2018, 10(5), 1442; online

26. Ngo Manh Khoi, Sven Casteleyn, M. Mehdi Moradi and Edzer Pebesma, 2018. Do Monetary Incentives Influence Users' Behavior in Participatory Sensing? Sensors 18(5), 1426; online

27. Nanki Sidhu, Edzer Pebesma Gilberto Câmara, 2018. Using Google Earth Engine to detect land cover change: Singapore as a use case. European Journal of Remote Sensing 51 (1), 486-500.

28. Shivam Gupta, Jorge Mateu, Auriol Degbelo, Edzer Pebesma, 2018. Quality of life, big data and the power of statistics. Statistics & Probability Letters; Volume 136, 101-104 .

29. Marius Appel, Florian Lahn, Wouter Buytaert, Edzer Pebesma, 2018. Open and scalable analytics of large Earth observation datasets: from scenes to multidimensional arrays using SciDB and GDAL. ISPRS Journal of Photogrammetry and Remote Sensing, 138, 47–56 (open access)

30. Nanki Sidhu, Edzer Pebesma, Yi-Chen Wang, 2017. Usability Study to Assess the IGBP Land Cover Classification for Singapore. Remote Sensing 9(10), 1075.

31. Meng Lu, Eliakim Hamunyela, Jan Verbesselt, Edzer Pebesma, 2017. Dimension reduction of multi-spectral satellite image time series to improve deforestation monitoring. Remote Sensing 9(10), 1025.

32. S. Gebbert, E. Pebesma, 2017. The GRASS GIS temporal framework. International Journal of Geographic Information Systems, 31 (7), pp 1273-1292.

33. Daniel Nüst, Markus Konkol, Marc Schutzeichel, Edzer Pebesma, Christian Kray, Holger Przibytzin, Jörg Lorenz, 2017. Opening the Publication Process with Executable Research Compendia. D-Lib Magazin 23 (1/2).

34. C. Knoth, E. Pebesma, 2017. Detecting dwelling destruction in Darfur through object-based change analysis of very-high-resolution imagery. International Journal of Remote Sensing 38 (1) 273-295.

35. Edzer Pebesma, Thomas Mailund, James Hiebert, 2016. Measurement units in R. The R Journal, 8-2, 486-494.

36. Benedikt Gräler, Edzer Pebesma and Gerard Heuvelink, 2016. Spatio-Temporal Interpolation using gstat. The R Journal 8(1), 204-218

37. S. Scheider, B. Gräler, E. Pebesma, C. Stasch, 2016. Modelling spatio-temporal information generation. Int J of Geographic Information Science, 30 (10), 1980-2008 (recommended pdf).

38. M. Lu, E. Pebesma, A. Sanchez, J. Verbesselt, 2016. Spatio-temporal change detection from multidimensional arrays: detecting deforestation from MODIS time series. ISPRS Journal of Photogrammetry and Remote Sensing, 117, 227–236 (pdf).

39. Lemke, D., S. Berkemeyer, V. Mattauch, O. Heidinger, E. Pebesma, H.-W. Hense, 2015. Small-area spatio-temporal analyses of participation rates in the mammography screening program in the city of Dortmund (NW Germany). BMC Public Health 15:1190.

40. Helle, K.B., E. Pebesma, 2015. Optimising Sampling Designs for the Maximum Coverage Problem of Plume Detection. Spatial Statistics 13, 31-44.

41. D. Lemke, V. Mattauch, O. Heidinger, E. Pebesma, H.W. Hense, 2015. Comparing adaptive and fixed bandwidth-based kernel density estimates in spatial cancer epidemiology. International Journal of Health Geographics 14:15.

42. Pebesma, E., R. Bivand, P.J. Ribeiro, 2015. Software for Spatial Statistics. Journal of Statistical Software 63(1), 1-8.

43. Hengl, T., P. Roudier, D. Beaudette, E. Pebesma, 2015. plotKML: Scientific Visualization of Spatio-Temporal Data. Journal of Statistical Software, 63(5), 1-25.

44. Skøien, J. O., G. Blöschl, G. Laaha, E. Pebesma, J. Parajka, and A. Viglione, 2014. rtop: an R package for interpolation of data with a variable spatial support, with an example from river networks. Computers & Geosciences 67, p. 180-190.

45. Kilibarda, M., T. Hengl, G.B.M. Heuvelink, B. Gräler, E. Pebesma, M. Percec Tadic, and B. Bajat, 2014. Spatio-temporal interpolation of daily temperatures for global land areas at 1 km resolution. Journal of Geophysical Research Atmospheres, 119 (5) p. 2294-2313 (open access)

46. Fraley, G., P. Jankowski, E. Pebesma, 2014. An Exploratory Approach to Spatial Decision Support. Computers, Environment & Urban Systems, 45 101-113

47. Truong, P.N., G.B.M. Heuvelink, E. Pebesma, 2014. Bayesian Area-to-Point Conditional Simulation Using Expert Knowledge as Informative Priors. International Journal of Applied Earth Observation and Geoinformation, 30, p. 128–138

48. Gebbert, S., E. Pebesma, 2014. A temporal GIS for field based environmental modeling. Environmental Modelling & Software 53, p 1-12 (pdf).

49. Stasch, C., S. Scheider, E. Pebesma, W. Kuhn, 2014. Meaningful Spatial Prediction and Aggregation. Environmental Modelling & Software, 51, (149–165, open access).

50. Brink, J. and E. Pebesma, 2014. Plume tracking with a mobile sensor based on incomplete and imprecise information. Transactions in GIS 18 (5), p. 740–766.

51. Lemke, D., V. Mattauch, O. Heidinger, E. Pebesma and H.-W. Hense, 2013. Detecting cancer clusters in a regional population with local cluster tests and Bayesian smoothing methods: a simulation study. International Journal of Health Geographics 12:54

52. Pupin Mello, M., J. Risso, C. Atzberger, P. Aplin, E. Pebesma, C.A. Oliveira Vieira and B.F.T. Rudorff, 2013. Bayesian Networks for Raster Data (BayNeRD): Plausible Reasoning from Observations. Remote Sensing 5 (11), 5999–6025.

53. Gerharz, L.E., O. Klemm, A.V. Broich and E. Pebesma, 2013. Spatio-temporal modelling of individual exposure to air pollution. Atmospheric Environment, Volume 64, 56-65.

54. Bastin, L., D. Cornford, R. Jones, G.B.M. Heuvelink, E. Pebesma, C. Stasch, S. Nativi, P. Mazetti, M. Williams, 2013. Managing Uncertainty in Integrated Environmental Modelling Frameworks: The UncertWeb framework. Environmental Modelling & Software 39, 116-134. (pdf).

55. Gerharz, L.E., E. Pebesma, 2013. Using geostatistical simulation to disaggregate air quality model results for individual exposure estimation on GPS tracks. Stochastic Environmental Research and Risk Assessment 27 (1), pp 223-234

56. Hosseinalizadeh, M., E. Pebesma, H. Ahmadi, S. Feiznia, F. Rivaz, B. Gräler, 2012. Spatial Modeling of the K factor for two sub-catchments with different tillage and grazing. Case study: loessial paired sub-catchments in the north-east of Iran. Journal of Biodiversity and Ecological Sciences 2 (2), 94-103.

57. Pebesma, E., 2012. spacetime: Spatio-Temporal Data in R. Journal of Statistical Software, volume 51, issue 7; 1-30.

58. Pebesma, E., D. Nüst, R. Bivand, 2012. The R software environment in reproducible geoscientific research. Eos, Transactions American Geophysical Union 93, vol 16, p. 163-164 (pdf).

59. Stasch, C., T. Foerster, C. Autermann, E. Pebesma, 2012. Spatio-Temporal aggregation of European Air Quality Observations in the Sensor Web. Computers and Geosciences 47, 111–118.

60. Espindola, G.M. de, A.P.D. de Aguiar, E. Pebesma, G. Câmara, L. Fonseca, 2012. Agricultural land use dynamics in the Brazilian Amazon based on remote sensing and census data. Applied Geography 32, 240–252 (pdf).

61. Hengl, T., G.B.M. Heuvelink, M. Percec Tadic, E. Pebesma, 2012. Spatio-temporal prediction of daily temperatures using time-series of MODIS LST images. Theoretical and Applied Climatology, Vol 107, Nr 1-2, 265-277, DOI.

62. Fritze, H., I.T. Stewart, E.J. Pebesma, 2011. Shifts in Western North American snowmelt runoff regimes for the recent warm decades. Journal of hydrometeorology, vol 12, p. 989–1006. DOI.

63. Baume, O.P., J.O. Skøien, G.B.M. Heuvelink, E.J. Pebesma, S.J. Melles, 2011. A geostatistical approach to data harmonization – Application to radioactivity exposure data. International Journal of Applied Earth Observation and Geoinformation, 13, 409-419

64. Pebesma, E., D. Cornford, G. Dubois, G.B.M. Heuvelink, D. Hristopoulos, J. Pilz, U. Stöhlker, G. Morin and J.O. Skøien, 2011. INTAMAP: the design and implementation of an interoperable automated interpolation web service. Computers & Geosciences, 37 (3), 343-352

65. Hiemstra, Paul H., Edzer J. Pebesma, Gerard B.M. Heuvelink, Chris J.W. Twenhöfel, 2010. Using rainfall radar data to improve interpolated maps of dose rate in the Netherlands. Science of the Total Environment, 409 (1), 123-133

66. Sluiter, R., E.J. Pebesma, 2010. Comparing techniques for vegetation classification using multi- and hyperspectral images and ancillary environmental data. International Journal of Remote Sensing, 1366-5901, Volume 31, Issue 23, Pages 6143 – 6161.

67. Nijs, T. de, E. Pebesma, 2010. Estimating the influence of the neighbourhood in the development of residential areas in the Netherlands. Environment and Planning B, Planning and Design 37, p. 21-41

68. Skøien, J.O., O. Baume, E. J. Pebesma, G.B.M. Heuvelink, 2010. Identifying and removing heterogeneities between monitoring networks. Environmetrics, 21 (1), p. 66 - 84

69. Hiemstra, P.H., E.J. Pebesma, C.J.W. Twenhöfel, G.B.M. Heuvelink, 2009. Real-time automatic interpolation of ambient gamma dose rates from the Dutch Radioactivity Monitoring Network. Computers & Geosciences 35 (8), Pages 1711-1721

70. Beelen, R., G. Hoek, E. Pebesma, D. Vienneau, K. de Hoogh, D.J. Briggs, 2009. Mapping of air pollution at a fine spatial scale across the European Union. Science of the Total Environment Vol. 407, No. 6, 1852-1867

71. Skøien, J.O., G. Blöschl, E.J. Pebesma, 2008. Geostatistics for automatic estimation of environmental variables - some simple solutions. Georisk, Vol. 2 No. 4, 259-272.

72. Hiemstra, Paul H., Edzer J. Pebesma, Chris J.W. Twenhöfel, Gerard B.M. Heuvelink, 2008. Automatic real-time interpolation of radiation hazards: a prototype and system architecture considerations. IJSDIR, Vol 3 (Special Issue GI-DAYS 2007, Muenster: Young Researchers Forum), 58-72.

73. Braak, C.J.F. ter, D.J. Brus and E.J. Pebesma, 2008. Comparing sampling patterns for kriging the spatial mean temporal trend. Journal of Agricultural, Biological and Ecological Statistics 13 (2), 159-176.

74. Schuurmans, J. M., M.F.P. Bierkens, E.J. Pebesma, and R. Uijlenhoet, 2007. Automatic Prediction of High-Resolution Daily Rainfall Fields for Multiple Extents: The Potential of Operational Radar. Journal of Hydrometeorology 8 (6), 1204-1224.

75. Dubois, G., E.J. Pebesma, P. Bossew, 2007. Automatic mapping in emergency: a geostatistical perspective. International Journal of Emergency Management 4 (3), pp. 455-467.

76. Addink, E.A., S.M. de Jong and E.J. Pebesma, 2007. The importance of scale in object-based mapping of vegetation parameters with hyperspectral imagery. Photogrammetric Engineering & Remote Sensing, 73 (8), 905–912.

77. Pebesma, E.J., P. Switzer, K. Loague, 2007. Error analysis for the evaluation of model performance: Rainfall-runoff event summary variables. Hydrological Processes 21, 3009-3024.

78. Pebesma, E.J., K. de Jong, D.J. Briggs, 2007. Visualising uncertain spatial and spatio-temporal data under different scenarios: an air quality example. International Journal of GIS, 21, 515–527 (Special Issue in Honour of the Contribution of Peter Burrough to Geographical Information Science). (pdf)

79. Pebesma, Edzer J., 2006. The Role of External Variables and GIS Databases in Geostatistical Analysis. Transactions in GIS Vol. 10 No. 4, 615-632. (pdf)

80. Pebesma, E.J., R.S. Bivand, 2005. Classes and methods for spatial data in R. R News 5 (2), 9–13.

81. Pebesma, E.J., 2005. Mapping Radioactivity from monitoring data, automating the classical geostatistical approach. Applied GIS, Vol. 1, No. 2.

82. Pebesma, E.J., R.N.M. Duin, P.A. Burrough, 2005. Mapping Sea Bird Densities over the North Sea: Spatially Aggregated Estimates and Temporal Changes. Environmetrics 16, (6), p 573-587. (pdf) (R script)

83. Pebesma, E.J., P. Switzer, K. Loague, 2005. Error analysis for the evaluation of model performance: Rainfall-runoff event time series data. Hydrological Processes, 19, p 1529-1548.

84. Pebesma, E.J., 2004. Multivariable geostatistics in S: the gstat package. Computers & Geosciences 30 (7), 683-691 (C&G best paper award for 2004).

85. Pfeffer, K., E.J. Pebesma, P.A. Burrough, 2003. Mapping alpine vegetation using vegetation observations and topographic attributes. Landscape Ecology 18: 759-776.

86. Jong, S.M. de, E.J. Pebesma, B. Lacaze, 2003. Aboveground biomass assessment of mediterranean Forests using Airborne Imaging Spectrometry: the DAIS Peyne Experiment Int. J. of Remote Sensing 24 (7), 1505-1520.

87. Kros, J., J.P. Mol Dijkstra, E.J. Pebesma, 2002. Assessment of the prediction error in a large-scale application of a dynamic soil acidification model. Stochastic Environmental Research and Risk Assessment 16, 279–306.

88. Horssen, P.W. van, E.J. Pebesma, P.P. Schot, 2002. Uncertainties in spatially aggregated predictions from a logistic regression model. Ecological Modelling 154 (1-2), 93-101.

89. Wit, M.J.M. de, E.J. Pebesma, 2001. Nutrient fluxes at the river basin scale. Part II: the balance between data availability and model complexity. Hydrological Processes 15, 761-775.

90. Thorsen, M., J.C. Refsgaard, S. Hansen, E.J. Pebesma, J.B. Jensen, and S. Kleeschulte, 2001. Assessment of uncertainty in simulation of nitrate leaching to aquifers at catchment scale. Journal of Hydrology 242, 210-227.

91. Hansen, S., M. Thorsen, E.J. Pebesma, S. Kleeschulte, H. Svendsen, 1999. Uncertainty in simulated nitrate leaching due to uncertainty in input data. A case study. Soil Use and Management 15 (3), pp. 167-175.

92. Finke, P.A., D. Wladis, J. Kros, E.J. Pebesma, G.J. Reinds, 1999. Quantification and simulation of errors in categorical data for uncertainty analysis of soil acidification modelling. Geoderma 93, 177-194.

93. Kros, J., E.J. Pebesma, G.J. Reinds and P.A. Finke, 1999. Uncertainty assessment in modelling soil acidification at the European scale: a case study. Journal of Environmental Quality 28 (2), pp. 366-377.

94. Heuvelink, G.B.M., and E.J. Pebesma, 1999. Spatial aggregation and soil process modelling. Geoderma 89, 47-65.

95. Pebesma, E.J. and G.B.M. Heuvelink, 1999. Latin hypercube sampling of Gaussian random fields. Technometrics 41 (4), pp. 303–312.

96. Pebesma, E.J. and C.G. Wesseling, 1998. Gstat, a program for geostatistical modelling, prediction and simulation. Computers & Geosciences 24 (1), 17–31.

97. Pebesma, E.J. and J.W. de Kwaadsteniet, 1997, Mapping Groundwater Quality in the Netherlands. Journal of Hydrology 200, pp. 364-386.

2 Conference papers

1. Edzer Pebesma, 2023. Reproducing Spatial Data Science Publications. Spatial Data Science Symposium, Sept 5-6 2023. https://doi.org/10.25436/E23K5H

2. Edzer Pebesma, Matthias Mohr, Florian Lahn, Peter Zellner, Mattia Rossi, Alexander Jacob, Patrick Griffiths, 2022. The R-spatial package ecosystem and openEO for analysing Earth Observation data. Living Planet Symposium, May 23-27 2022, session C5.03: Open Source, data science and toolboxes in EO: Current status and evolution.

3. Alexander Jacob, Matthias Mohr, Peter James Zellner, Jeroen Dries, Michele Claus, Christian Briese, Patrick Griffiths and Edzer Pebesma, 2021. openEO Platform brings Analysis-Ready Data On Demand. Proceedings of the 2021 conference on Big Data from Space BiDS '21, 18-20 May 2021. https://doi.org/10.2760/125905

4. A. Joshi, E. Pebesma, R. Henriques, and M. Appel, 2019. SciDB Based Framework For Storage And Analysis of Remote Sensing Big Data. Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLII-5/W3, 43–47, 2019 https://doi.org/10.5194/isprs-archives-XLII-5-W3-43-2019.

5. Christian Kray, Edzer Pebesma, Markus Konkol and Daniel Nüst, 2019. Reproducible Research in Geoinformatics: Concepts, Challenges and Benefits (Vision Paper). In: Sabine Timpf, Christoph Schlieder, Markus Kattenbeck, Bernd Ludwig and Kathleen Stewart, 14th International Conference on Spatial Information Theory (COSIT 2019), 8:1–8:13, Leibniz International Proceedings in Informatics (LIPIcs), 142, Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, Dagstuhl, Germany. http://drops.dagstuhl.de/opus/volltexte/2019/11100.

6. Pramit Ghosh, Florian Lahn, Sören Gebbert, Matthias Mohr and Edzer Pebesma, 2018. Running user-defined functions in R on Earth observation data in cloud back-ends. Geomundus converence, Dec 7-8, 2018; http://geomundus.org/2018/docs/papers/Pramit.pdf

7. Edzer Pebesma, Marius Appel, and Florian Lahn, 2018. R vector and raster data cubes for openEO. EGU2018-8198; IE4.4/GM2.8/AS5.8/BG1.17/CL5.28/GD10.10/ - R and the benefit of low-cost solutions - democratic participation to face challenges in Earth science (co-organized).

8. Avipsa Roy, Edzer Pebesm, 2017. A Machine Learning Approach to Demographic Prediction using Geohashes. SocialSens'17 Proceedings of the 2nd International Workshop on Social Sensing, Pittsburgh, PA, USA — April 18 - 21, 2017, Pages 15-20 https://dl.acm.org/citation.cfm?id=3055603

9. Luiz Gustavo Diniz, Merret Buurman, Pedro R. Andrade, Gilberto Câmara, Edzer Pebesma, 2013. Measuring Allocation Errors in Land Change Models in Amazonia. Proceedings GeoINFO 2013, Nov 24-27, Campos do Jordão, Br.

10. Marcio Pupin Mello, Daniel Alves Aguiar, Bernardo Friedrich Theodor Rudorff, Edzer Pebesma, Jim Jones, Naiara Carolina Pontes Santos. Spatial statistic to assess remote sensing acreage estimates: an analysis of sugarcane in São Paulo state, Brazil. IGARSS 2013, Jul 21-16, Melbourne, Australia.

11. Matthias Hinz, Daniel Nüst, Benjamin Proß, Edzer Pebesma, 2013. Spatial Statistics on the Geospatial Web. Short paper, AGILE 2013.

12. Schulz, M., J. Skøien, L. Gerharz, E. Pebesma, G. Dubois. Uncertainty propagation between web services – a case study using the eHabitat WPS to identify unique ecosystems. In: R. Seppelt, A.A. Voinov, S. Lange, D. Bankamp (Eds.) Proceedings of the 2012 International Congress on Environmental Modelling & Software: Managing Resources of a Limited Planet, Sixth Biennial Meeting, Leipzig, Germany; pp. 1489-1496.

13. Pross, B., C. Stasch, L. Gerharz, E. Pebesma, 2012. Tools for uncertainty propagation in the Model Web using Monte Carlo Simulation. In: R. Seppelt, A.A. Voinov, S. Lange, D. Bankamp (Eds.) Proceedings of the 2012 International Congress on Environmental Modelling & Software: Managing Resources of a Limited Planet, Sixth Biennial Meeting, Leipzig, Germany; pp. 933-941.

14. Gräler, B., E. Pebesma, 2012. Modelling Dependence in Space and Time with Vine Copulas. GEOSTATS 2012: Ninth International Geostatistics Congress, Oslo, Norway, June 11-15, 2012

15. Truong, P., G.B.M. Heuvelink and E. Pebesma, 2012. Influence of point-support variogram on disaggregation uncertainty using ATP Kriging. GIZeitgeist, 16th and 17th of March 2012, Muenster. `http://gi-zeitgeist.uni-muenster.de/`

16. Senaratne, H. L. Gerharz, E. Pebesma, A. Schwering, 2012. Usability of Spatio-Temporal Uncertainty Visualisation Methods. In: Bridging the Geographic Information Sciences, Lecture Notes in Geoinformation and Cartography, J. Gensel, D. Josselin and D. Vandenbroucke. Springer Berlin Heidelberg, doi, draft pdf. (Agile 2012 proceedings)

17. Fairgrieve, S., C. Stasch, S. Falke, L. Gerharz, E. Pebesma, 2011. Error Aware Near Real-Time Interpolation of Air Quality Observations in GEOSS. ISW-2011: Integrating Sensor Web and Web-based

Geoprocessing, An AGILE 2011 Conference Workshop; Utrecht, The Netherlands, April 18, 2011 (pdf).

18. Helle, Kristina B., Poul Astrup, Wolfgang Raskob and Edzer Pebesma, 2011. Methods and Sampling Designs to Map Plumes Using Prior Knowledge from Simulations. Short paper presented at ISSDQ 2011.

19. Giovana M. de Espindola, Edzer Pebesma, Gilberto Câmara, 2011. Spatio-temporal regression models for deforestation in the Brazilian Amazon. STDM 2011, The International Symposium on Spatial-Temporal Analysis and Data Mining, University College London - 18th-20th July 2011 pdf

20. Helle, K.B., L. Urso, P. Astrup, T. Mikkelsen, J.C. Kaiser, E. Pebesma, C. Rojas-Palma, E. Holo, J.E. Dyve, W. Raskob, 2011. Planning sensor locations for the detection of radioactive plumes for Norway and the Balkans. Planning and assessment of monitoring strategies for the detection of radioactive plumes for Norway and the Balkans' region. ICRER conference (19th - 24th June 2011), Hamilton, Canada.

21. Katharina Henneböhl, Marius Appel, Edzer Pebesma, 2011. Spatial interpolation in massively data parallel computing environments. In: Stan Geertman, Wolfgang Reinhardt, and Fred Toppen, editors. Proceedings of the 14th AGILE International Conference on Geographic Information Science - Advancing Geoinformation Science for a Changing World, Utrecht, 2011. AGILE. ISBN 978-90-816960-1-2.

22. Daniel Nüst, Christoph Stasch and Edzer J. Pebesma, 2011. Connecting R to the Sensor Web. In: S.C.M. Geertman, W.P. Reinhardt, and F.J. Toppen, editors. Advancing Geoinformation Science for a Changing World. Lecture Notes in Geoinformation and Cartography. Springer Verlag, Berlin, etc., 2011. ISBN 978-3-642-19788-8.

23. Gerharz, L.E., B. Gräler, E Pebesma, 2011. Disaggregating gridded air quality data for individual exposure modelling. Procedia Environmental Sciences Volume 7, p. 146-151 Spatial Statistics 2011: Mapping Global Change.

24. Gräler, B., E. Pebesma, 2011. The pair-copula construction for spatial data: a new approach to model spatial dependency. Procedia Environmental Sciences Volume 7, p. 206-211 Spatial Statistics 2011: Mapping Global Change.

25. Pebesma, E., D. Cornford, S. Nativi, and C. Stasch, 2010. The uncertainty enabled model web (UncertWeb). *Environmental Information Systems and Services Infrastructures and Platforms*, Workshop at EnviroInfo2010, Bonn/Cologne, October 6-8, 2010. (proceedings; video)

26. Raskob, W., C. Rojas-Palma, C. Kaiser, T. Mikkelsen, E. Pebesma, 2009. Design of optimised systems for monitoring of radiation and radioactivity in case of a nuclear or radiological emergency in europe (DETECT). Proceedings of the 14. Fachgespräch zur Überwachung der Umweltradioaktivität, Freiburg, DE, March 23-26, 2009

27. Stoehlker, U., G. Dubois, J. De Jesus, S. Burbeck, M. Bleher, E. Pebesma, 2009. Real-time mapping for environmental surveillance: A decision-maker's perspective. StatGIS 2009: Geoinformatics for environmental surveillance. Milos, June 17-18 2009.

28. Skøien, J.O., E.J. Pebesma, G. Blöschl, 2009. rtop – an R package for interpolation along the stream network. StatGIS 2009: Geoinformatics for environmental surveillance. Milos, June 17-18 2009.

29. Pebesma, E., D. Cornford, G. Dubois, G. Heuvelink, D. Hristopoulos, J. Pilz, U. Stoehlker, J. Skøien, 2009. INTAMAP: an interoperable automated interpolation web service. StatGIS 2009: Geoinformatics for environmental surveillance. Milos, June 17-18 2009.

30. Henneböhl, K. L.E. Gerharz, E.J. Pebesma, 2009. An OGC web service architecture for near real-time interpolation of air quality over Europe. StatGIS 2009: Geoinformatics for environmental surveillance. Milos, June 17-18 2009.

31. Pebesma, E., G. Dubois, D. Cornford, 2009. Automated mapping of environmental variables from a SEIS or SISE perspective. Presented at: European conference of the Czech Presidency of the Council of the EU: TOWARDS eENVIRONMENT (Challenges of SEIS and SISE: Integrating Environmental Knowledge in Europe). Jiri Hrebicek (chief editor), Jiri Hradec, Emil Pelikan, Ondrej Mirovsky, Werner Pillmann, Ivan Holoubek, Thomas Bandholtz (Eds.) Masaryk University, Mar 25-27, 2009.

32. Dubois, G., J. de Jesus, B. Doherty, D. Cornford, E.J. Pebesma. Lessons learnt from INTAMAP, an interoperable web service for the real-time interpolation of environmental variables. 33rd Int. Symposium on Remote Sensing of the Environment (http://isrse-33.jrc.ec.europa.eu/), May 4-8, 2009.

33. Skøien, J.O., G.B.M. Heuvelink, E.J. Pebesma. Unbiased block predictions and exceedance Probabilities for environmental thresholds. In: Julián M. Ortiz and Xavier Emery (Eds.), GEOSTATS 2008 - VIII International Geostatistics Congress 1-5 December, Santiago, Chile.

34. Baume, O., J.O. Skøien, G.B.M. Heuvelink, E.J. Pebesma. Data harmonization with geostatistical tools: a Bayesian extension. In: Julián

M. Ortiz and Xavier Emery (Eds.), GEOSTATS 2008 - VIII International Geostatistics Congress 1-5 December, Santiago, Chile.

35. Pebesma, E.J., G. Dubois, D. Cornford, 2008. The challenge of real-time automatic mapping for environmental monitoring network management. In: A. Soares, M.J. Pereira, R. Dimitrakopoulos (Eds.): geoENV VI, Geostatistics for Environmental Applications. Quantitative Geology and Geostatistics, Vol. 15, pp 467-476. Springer.

36. Hiemstra, P.H., E.J. Pebesma, C.J.W. Twenhöfel, G.B.M. Heuvelink, 2007. Toward an Automatic Real-Time Mapping System for Radiation Hazards. GI-Days 2007 – Young researchers Forum. In: F. Probst, C. Kessler (Eds.), Proceedings of the 5th Geographic Information Days 10.-12. September 2007, Münster, Germany. IfGI prints 30.

37. Williams, M., Cornford, D., Ingram, B. R., Bastin, L., Beaumont, A. J., Pebesma, E. and Dubois, G. 2007. Supporting interoperable interpolation: the INTAMAP approach. International Symposium on Environmental Software Systems 2007, 22-25 May, Prague, Czech Republic.

38. Addink, E.A., S.M. de Jong, E.J. Pebesma, 2007. Object definition for aboveground biomass and leaf area index estimation. Proceedings 5th EARSeL Workshop on Imaging Spectroscopy. Bruges, Belgium, April 23-25, 2007.

39. Addink, E.A., Jong, S.M. de, Pebesma, E.J. & Nijland, W. (2007). Estimating biomass and LAI in Mediterranean forests from HyMap data using object-oriented image analysis. How to define optimal objects? In Proceedings ForestSat 2007 SCIENTIFIC WORKSHOP - Forests and Remote sensing : Methods and Operational Tools (pp. 5). Montpellier, France: ForestSat.

40. Pebesma, E.J., D. Karssenberg, K. de Jong, 2006. Dynamic visualisation of spatial and spatio-temporal probability distribution functions. Proceedings of 7th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, July 5-7 2006. Edited by M. Caetano and M. Painho.

41. Bossew, P., Dubois, G. and Pebesma E. J. (2005). Decision making and radiological maps: understanding map uncertainties in emergency. Proceedings of the International Conference on Monitoring, Assessments and Uncertainties for Nuclear and Radiological Emergency Response, November 21-25, 2005, Rio de Janeiro, Brazil. IAEA.

42. Bivand, R., E.J. Pebesma, Barry Rowlingson (2005) Collaborative open source software development: the case of `sp`, a package of R

class definitions for spatial data. Presented at the 8th International Conference on GeoComputation, School of Natural Resources & Environment, University of Michigan, session 503, July 31 — August 3, 2005

43. Pebesma, E.J., R.N.M. Duin (2005) Spatio-temporal mapping of sea floor sediment pollution in the North Sea. In: Ph. Renard, and R. Froidevaux, eds. Proceedings GeoENV 2004 – Fifth European Conference on Geostatistics for Environmental Applications, p. 365–378; Springer.

44. Pebesma, E.J., 2003, Gstat: multivariable geostatistics for S. Proceedings of the 3rd International Workshop on Distributed Statistical Computing (DSC 2003), March 20–22, Vienna, Austria.

45. Heuvelink, G.B.M., and Pebesma, E.J., (2003). Change of support and uncertainty propagation with regional applications of soil process models. In Parks, B. O., Clarke, K. M. and Crane, M. P. (Ed.), Proceedings of the 4th international conference on integrating geographic information systems and environmental modeling: problems, prospects, and needs for research; 2000 Sep 2-8; Boulder, CO. Boulder: University of Colorado, Cooperative Institute for Research in Environmental Science. (www and CD).

46. Heuvelink, G.B.M. and E.J. Pebesma, 2002, Is the ordinary kriging variance a proper measure of interpolation error? In: Proceedings of the fifth International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences (eds. G. Hunter and K. Lowell). Melbourne: RMIT University, 179-186.

47. Pebesma, E.J., A.F. Bio, R.N.M. Duin, 2000. Mapping Sea Bird Densities on the North Sea: combining geostatistics and generalised linear models. In: W.J. Kleingeld and D.G. Krige, editors: Geostatistics 2000 Cape Town, Proceedings of the Sixth International Geostatistics Congress held in Cape Town, South Africa, in April 2000.

48. Pebesma, E.J., G.B.M. Heuvelink, J. Kros, 2000. Error assessment in a soil acidification modelling study: efficiency issues and change of support. In: G.B.M. Heuvelink and M.J.P.M. Lemmens, editors. Accuracy 2000: proceedings of the 4th international symposium on spatial accuracy assessment in natural resources and environmental sciences. Delft: Delft University Press. pp. 521-528.

49. De Jong, S.M., E.J. Pebesma, and B. Lacaze, 2000. Assessing aboveground biomass of Mediterranean forests using airborne imaging spectrometry and interpolation techniques. In: G.B.M. Heuvelink and

M.J.P.M. Lemmens, editors. Accuracy 2000: proceedings of the 4th international symposium on spatial accuracy assessment in natural resources and environmental sciences. Delft: Delft University Press. pp. 161-169.

50. Heuvelink, G.B.M., E.J. Pebesma, 2000. Change of support and uncertainty propagation with regional applications of soil process models. Presented at 4th International Conference on Integrating GIS and Environmental Modeling (GIS/EM4): Problems, Prospects and Research Needs. Banff, Alberta, Canada, September 2 - 8, 2000.

51. Jong, K. de, D. Karssenberg, E. Pebesma, P.A. Burrough, 2000. An environmental modeling language for model construction in the temporal, 3D spatial and stochastic dimension: prototype. Presented at 4th International Conference on Integrating GIS and Environmental Modeling (GIS/EM4): Problems, Prospects and Research Needs. Banff, Alberta, Canada, September 2 - 8, 2000.

52. Kros, J., J.P. Mol-Dijkstra and E.J. Pebesma, 2000. Calibration and validation of a dynamic soil acidification model at the European scale. In: G.B.M. Heuvelink and M.J.P.M. Lemmens, editors. Accuracy 2000: proceedings of the 4th international symposium on spatial accuracy assessment in natural resources and environmental sciences. Delft: Delft University Press. pp. 381-388.

53. Pebesma, E.J., D. Karssenberg, K. de Jong, 2000. The stochastic dimension in a dynamic GIS. Presented at In: J.G. Bethlehem, P.G.M. van der Heijden, editors. Compstat 2000, Proceedings in Computational Statistics. Physica-Verlag, Heidelberg. pp. 379-384.

54. Refsgaard, J.C., M. Thorsen, J.B. Jensen, S. Hansen, G. Heuvelink, E. Pebesma, S. Kleeschulte, D. Ramaekers, 1998. Uncertainty in Spatial Decision Support Systems - Methodology related to Prediction of Groundwater Pollution. In: V. Bavonic and L.C. Larsen (Eds) Proceedings of the Third International Conference Hydroinformatics 98, held in Copenhagen August 24-26, 1998. Vol.2, 1151-1158. Balkema Publishers Rotterdam.

55. Heuvelink, G.B.M., P. Musters and E.J. Pebesma, 1997. Spatio-temporal modelling of soil water content. In: Baaffi, E., and Schofield, N., eds. Geostatistics Wollongong 1996, Vol. 2: Kluwer Academic Publ., Dordrecht, p. 1020-1030.

56. Pebesma, E.J., J.W. de Kwaadsteniet, 1997. Mapping spatial and temporal variation of groundwater quality in the Netherlands. In: A. Soares, J. Gomez-Hernandez, and R. Froidevaux, eds. GeoENV I –

geostatistics for environmental applications. Kluwer Academic Publ., Dordrecht, p. 111-122.

3 Conference/meeting (extended) abstracts or posters

1. Edzer Pebesma, Martin Fleischmann, 2023. R Spatial and GeoPython, a happy marriage. GeoPython 2023. abstract, slides.

2. Yomna Eid and Edzer Pebesma, 2023. Is maximizing spatial resolution worth the computational cost? submitted to EOS4.2 - Evaluating and reducing the environmental impact of academic research in Geosciences; abstract EGU23-14915, poster

3. Ludwig, Marvin; Bahlmann, Jonathan; Pebesma, Edzer; Meyer, Hanna, 2022. Developing transferable spatial prediction models: a case study of satellite based landcover mapping. XXIV ISPRS Congress, track TCIII-Remote Sensing.

4. Edzer Pebesma, Matthias Mohr, 2021. openEO: Open Science For Earth Observation Research. FOSS4G Aug 22-26 2022, Firenze.

5. Johannes Heisig, Edward Olson, and Edzer Pebesma, 2022. Mapping Wildfire Fuels, Behavior, and Hazard in a Managed Temperate Forest Using Airborne LiDAR and Sentinel-1 & -2. EGU 2022, EGU22-10166

6. Benjamin Schumacher, Patrick Griffiths, Edzer Pebesma, Jeroen Dries, Alexander Jacob, Daniel Thiex, Matthias Mohr, and Christian Briese, 2022. openEO Platform: Enabling analysis of large-scale Earth Observation data repositories with federated computational infrastructure, EGU 2022, EGU22-9101

7. Marvin Ludwig, Álvaro Moreno Martínez, Norbert Hölzel, Edzer Pebesma, and Hanna Meyer, 2022. Global maps from local data: Towards globally applicable spatial prediction models EGU 2022, EGU22-7529

8. Hanna Meyer, Edzer Pebesma, 2021. Estimating the area of applicability of remote sensing-based machine learning models with limited training data. 2021 IEEE International Symposium on Geoscience and Remote Sensing (IGARSS)

9. Dewey Dunnington, Edzer Pebesma, 2021. Open source geometry on the sphere using S2 Geometry and R. FOSS4G 2021.

10. Pebesma, E., Griffiths, P., Briese, C., Jacob, A., Skerlevaj, A., Dries, J., Camara, G., and Mohr, M.: Analyzing large-scale Earth Observation data repositories made simple with OpenEO Platform, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-9602, https://doi.org/10.5194/egusphere-egu21-9602, 2021.

11. Hanna Meyer and Edzer Pebesma, 2020. Mapping (un)certainty of machine learning-based spatial prediction models based on predictor space distances. EGU General Assembly 2020; https://meetingorganizer.copernicus.org/EGU2020/EGU2020-8492.html

12. Milenković, Milutin; Verbesselt, Jan; Dries, Jeroen; Masiliunas, Dainius; Mîrț, Andrei; De Sy, Veronique; Reiche, Johannes; Wiell, Daniel; Jonckheere, Inge; Schramm, Matthias; Wagner, Wolfgang; Pebesma, Edzer (2020). Demonstration of the openEO API for Analyzing Sentinel-1 Time Series for Monitoring Agriculturally Driven Forest Loss in the Brazilian Amazon; EO for Agriculture under Pressure 2020.

13. Edzer Pebesma, Wolfgang Wagner, Pierre Soille, Miha Kadunc, Noel Gorelick, Matthias Schramm, Jan Verbesselt, Johannes Reiche, Matthias Mohr, Jeroen Dries, Alexander Jacob, Markus Neteler, Soeren Gebbert, Christian Briese and Pieter Kempeneers, 2019. openEO analyses Earth Observation data based on user-defined raster and vector data cube views. Geophysical Research Abstracts Vol. 21, EGU2019-9737, 2019, EGU General Assembly 2019. abstract, poster.

14. A. Jacob, E. Pebesma, M. Neteler, W. Wagner, J. Verbesselt, M. Mohr, J. Dries, R. Monsorno, P. Budhwar, C. Briese, T. Mistelbauer, M. Schramm, M. Kadunc, 2019. OpenEO – an API for Standardised Access to Big Earth Observation Data in a Landscape of a Growing Number of EO Cloud Providers. Living Planet Symposium, Milan 13-17 May, 2019.

15. A. Jacob, E. Pebesma, M. Neteler, W. Wagner, J. Verbesselt, M. Mohr, J. Dries, R. Monsorno, P. Budhwar, C. Briese, L. Foresta, M. Schramm, M. Kadunc, P. Kempeneers, N. Gorelick, 2019. OpenEO – An API for Standardised Access to Big Earth Observation Data in a Landscape of a Growing Number of EO Cloud Providers. EARSeL Symposium 2019.

16. Edzer Pebesma, Michael Sumner, Etienne Racine, 2019. Spatial Data Science in the Tidyverse. Rstudio::conf 2019, Austin, Jan 17-18, 2019; slides, video.

17. Schramm, Matthias; Pebesma, Edzer; Wagner, Wolfgang; Soille, Pierre; Kadunc, Miha; Gorelick, Noel; Verbesselt, Jan; Reiche, Johannes; Appel, Marius; Dries, Jeroen; Jacob, Alexander; Gößwein, Bernhard;

Neteler, Markus; Gebbert, Soeren; Briese, Christian; Kempeneers, Pieter. 2018. openEO: An Open Interface To Allow Standardized Communication With EO Service Providers. Abstract 132; Φ-week EO Open Science and Future EO, ESRIN, Frascati, 12-16 November 2018

18. Edzer Pebesma, Wolfgang Wagner, Pierre Soille, Miha Kadunc, Noel Gorelick, Matthias Schramm, Jan Verbesselt, Johannes Reiche, Marius Appel, Jeroen Dries, Alexander Jacob, Markus Neteler, Soeren Gebbert, Christian Briese, and Pieter Kempeneers, 2018. openEO: an open API for cloud-based big Earth Observation processing platforms. EGU2018-4957 ESSI2.2 - Data cubes of Big Earth Data - a new paradigm for accessing and processing Earth Science Data (poster)

19. Matthias Schramm, Wolfgang Wagner and Edzer Pebesma, 2017. openEO - An open source Interface between EO Data Infrastructures and Front-End Applications. 2017 Conference on Big Data from Space (BiDS'17) 28-30 November 2017 Centre de Congrès Pierre Baudis, Toulouse, France

20. Verbesselt, Jan; Pebesma, Edzer; Hamunyela, Eliakim; Reiche, Johannes; DeVries, Ben; Dutrieux, Loic; Tsendbazar, Nandin-Erdene; Herold, Martin, 2017. Open Source Software For Change Monitoring Using Satellite Image Time Series: Overview, Challenges And Solutions. Earth Observation Open Science 2017 Conference (ESRIN, Frascati, 25-28 September 2017)

21. Joshi, Jigeeshu; Edzer Pebesma, Marius Appel, 2017. Evaluation of Array Database to Manage and Query Massive Sensor Data. Earth Observation Open Science 2017 Conference (ESRIN, Frascati, 25-28 September 2017)

22. Edzer Pebesma, Etienne Racine, Michael Sumner, 2017. Scalable, Spatiotemporal Tidy Arrays for R (stars). UseR! 2017, Jul 4-7 2017, Brussels, Belgium.

23. Spatio–temporal point patterns analysis of geolocated tweets to characterise urban dynamics. Fernando Santa, Roberto Henriques, Joaquin Torres, Edzer Pebesma, 2017. Spatial Statistics, Jul 4-7 2017, Lancaster, UK.

24. Benedikt Gräler, Christoph Stasch, Benedikt Gräler, Edzer Pebesma, 2017. EnviroCar - community driven open data car trajectories. Poster, Spatial Statistics, Jul 4-7 2017, Lancaster, UK.

25. Shivam Gupta, Edzer Pebesma, Jorge Mateu, 2017. Air quality monitoring network location optimization for robust Land Use Regression Model. Poster, Spatial Statistics, Jul 4-7 2017, Lancaster, UK.

26. Edzer Pebesma, 2017. Using R for large spatiotemporal data sets. EGU, PICO session EGU2017-6585 (slides).

27. Marius Appel, Daniel Nüst, and Edzer Pebesma, 2017. Reproducible Earth observation analytics: challenges, ideas, and a study case on containerized land use change detection. EGU2017-17610 abstract

28. Meng Lu, Marius Appel, Edzer Pebesma, 2017. Modelling spatiotemporal change using multidimensional arrays. EGU IE3.1/BG9.58; EGU2017-17610

29. Teresa Rojas Rojas, Rafael Vives, Dorothea Lemke, Carlos Castañeda, Nancy Hidalgo, Gérard Cochonneau, Aníbal Sánchez, Eric Deharo, Javier Herrera, Edzer Pebesma, Xavier Deparis, Stéphane Bertani, 2016. Epidemiology and spatial analysis of cancer in Peru. Abstract, 2016 World Cancer Congress, Paris, Oct 31-Nov 3, 2016 / SS-1282

30. Sidhu, Nanki; Pebesma, Edzer; Câmara, Gilberto, 2016. Exploring land use change in Singapore using Google Earth Engine. 6th EARSeL SIG LU/LC & 2nd EARSeL LULC/NASA LCLUC Workshop.

31. Pebesma, E., 2016. Spatial data in R: simple features and future perspectives. UseR!, The R User Conference 2016, Stanford, Jun 27-30, 2016 (pdf).

32. Marek Smid, Ana Cristina Costa, Edzer Pebesma, Carlos Granell. A review of downscaling procedures – a contribution to the research on climate change impacts at city scale by Marek Smid et al. EGU 2016, CL5.12/AS1.3/OS4.10; EGU2016-6768.

33. Daniel Nüst, Markus Konkol, Edzer Pebesma, Christian Kray, Stephanie Klötgen, Marc Schutzeichel, Jörg Lorenz, Holger Przibytzin, Dirk Kussmann. Opening Reproducible Research. EGU 2016; ESSI3.6; EGU2016-7396.

34. Edzer Pebesma, Simon Scheider, Benedikt Gräler, Christoph Stasch, and Matthias Hinz. An algebra for spatio-temporal information generation. EGU 2016, ESSI2.5; EGU2016-9523. (pdf)

35. Marius Appel, Florian Lahn, Edzer Pebesma, Wouter Buytaert and Simon Moulds. Scalable Earth-observation Analytics for Geoscientists: Spacetime Extensions to the Array Database SciDB EGU 2016, ESSI3.1; EGU2016-11780.

36. M. Appel, E. Pebesma, G. Câmara, 2015. Scalable In-Database Regression Analysis of Large Earth-Observation Datasets. EO Open Science 2.0 workshop at ESA-ESRIN, Frascati IT, Oct 12-16, 2015.

37. D. Lemke, S. Berkemeyer, V. Mattauch, O. Heidinger, E. Pebesma, H-W. Hense. Small-area, spatio-temporal analyses of participation rates in the mammography screening program in the city of Dortmund (NW Germany). 10. Jahrestagung der Deutschen Gesellschaft für Epidemiologie 30. September bis 2. Oktober 2015.

38. E. Pebesma, 2015. Spatial Statistics' New Frontiers. Oral presentation at *The 17th Annual Conference fo the International Association for Mathematical Geosciences* (IAMG 2015), Freiberg, Sept 5-13, 2015 (pdf).

39. W. Buytaert, S. Moulds, J. Skøien, E. Pebesma, D. Reusser, 2015. Facilitating hydrological data analysis workflows in R: the RHydro package. EGU 2015, session HS3.3

40. J.O. Skøien, G. Blöschl, Gregor Laaha, J. Parajka, E. Pebesma, A. Viglione, 2015. Developments of rtop – interpolation and simulation of data with a variable spatial support. EGU 2015, session HS3.3.

41. Meng Lu, Edzer Pebesma, 2015. Spatio-temporal change modeling with array data. EGU session ESSI2.5/SSS11.10.

42. Edzer Pebesma, 2014. Analyzing Geoscientific Data with R: Past, Present, Future. AGU fall meeting, IN22A-01.

43. Stasch, C., D. Nüst, M. Rieke, A. Remke, E. Pebesma, 2014. enviroCar – Open car data and open analysis tools for sustainable transportation development. The international conferences ICT4S - ICT for Sustainability. Stockholm, Sweden 24-27 August 2014. `http://2014.ict4s.org/`.

44. C. Knoth, E. Pebesma, 2014. Detecting Destruction in Conflict Areas in Darfur. GEOBIA 2014 - Geographic Object Based Image Analysis; Thessaloniki, Greece

45. Meng Lu and Edzer Pebesma, 2014. Modeling change from large-scale high-dimensional spatio-temporal array data. EGU General Assembly 2014, session ESSI2.6.

46. Christoph Stasch, Simon Scheider, Edzer Pebesma, 2014. Annotating spatio-temporal datasets for meaningful analysis in the Web. EGU General Assembly 2014, session ESSI2.2.

47. Florian Lahn, Christian Knoth, Kristina Helle, Torsten Prinz and Edzer Pebesma, 2014. Developing an open source-based spatial data infrastructure for integrated monitoring of mining areas. EGU General Assembly 2014, session ESSI2.7.

48. E. Pebesma, 2014. HydRology. EGU General Assembly 2014, session HS3.3, Open Source Computing in Hydrology.

49. Jairo A. Torres, Edzer Pebesma, 2013. State of R in Hydrological Modelling. 2nd OpenWater symposium, Brussels, September 16-17, 2013. (abstract, slides)

50. Phuong N. Truong, Gerard B.M. Heuvelink, Edzer Pebesma, Bayesian area-to-point kriging with expert elicitation of a prior for the point support variogram. Spatial Statistics 2013.

51. Pebesma, E., C. Stasch, S. Scheider, W. Kuhn: Towards meaningful spatial statistics. Spatial Statistics 2013. (Rnw file)

52. Pebesma, E., K.B. Helle, C. Stasch, S. Rasouli, H. Timmermans, S.-E. Walker, B. Denby, 2013. Uncertainty in exposure to air pollution. Geophysical Research Abstracts Vol. 15, EGU2013-8362, 2013 EGU General Assembly 2013

53. Skøien, J., G. Laaha, D. Koffler, G. Blöschl, E. Pebesma, J. Parajka, A. Viglione, 2013. Rtop – an R package for interpolation of data with a variable spatial support - examples from river networks. EGU General Assembly 2013

54. Demuth, D., D. Nuest, A. Bröring, E. Pebesma. The AirQuality SenseBox. Geophysical Research Abstracts Vol. 15, EGU2013-5146, 2013 EGU General Assembly 2013

55. Cornford, D., C. Stasch, E. Pebesma, R. Jones, L. Bastin, L. Bigagli, 2013. Building the "Uncertainty Enabled Model Web" – lessons learned, 2013. Geophysical Research Abstracts Vol. 15, EGU2013-7639, 2013 EGU General Assembly 2013

56. Rundel, C., R. Bivand, E. Pebesma. rgeos: spatial geometry predicates and topology operations in R. Abstract, UseR! 2012.

57. Nüst, D., E. Pebesma, 2012. R in the Sensor Web. Sensing a Changing World 2012; workshop, May 9-11, 2012, Wageningen.

58. Christoph Stasch, Richard Jones, Dan Cornford, Martin Kiesow, Matthew Williams, and Edzer Pebesma, 2012. Representing Uncertainties in the Sensor Web. Sensing a Changing World 2012; workshop, May 9-11, 2012, Wageningen.

59. Jon Olav Skøien, G. Blöschl, G. Laaha, E. J. Pebesma, J. Parajka, A. Viglione, 2012. Interpolating runoff-related variables with rtop. GEOSTATS 2012: Ninth International Geostatistics Congress, Oslo, Norway, June 11-15, 2012

60. Pebesma, E., 2012. R for reproducible geographical research. AAG meeting, N.Y., Feb 24-27, 2012.

61. Benecke, N., K. Zimmermann, A. Müterthies, K. Pakzad, S. Stephan, J. Kateloe, A. Preuße E. Pebesma, T. Prinz. 2012. GMES4Mining – Innovative Geoservices for Exploration and Monitoring of Mining Areas. In: Proceedings of the 7th International Symposium AIMS 2012. Aachen, 2012, p. 409-419

62. Gerharz, L.E., C. Autermann, H. Hopmann, C. Stasch, E. Pebesma, 2012. Uncertainty visualisation in the Model Web. Abstract; EGU General Assembly, 2012.

63. Gerharz, L.E., E. Pebesma, B. Denby, 2012. Assessing uncertain human exposure to ambient air pollution using environmental models in the Web. Abstract; EGU General Assembly, 2012.

64. Skøien, J.O., G. Laaha, D. Koffler, G. Blöschl, E. Pebesma, J. Parajka, A. Viglione, 2012. Rtop – an R package for interpolation along the stream network. Abstract; EGU General Assembly, 2012.

65. Proß, B., D. Cornford, L. Gerharz, R. Jones, E. Pebesma, C. Stasch, M. Williams, 2011. Are you sure? - Open Source Tools for Uncertainty Enabling the Model Web. http://2011.foss4g.org/sessions/are-you-sure-open-source- FOSS4G 2011. September 12 - 16, 2011. Boulder Colorado, USA.

66. Stasch, C., Autermann, C., Foerster, T., Pebesma, E., 2011. Towards a Spatiotemporal Aggregation Service in the Sensor Web. In: Stan Geertman, Wolfgang Reinhardt, and Fred Toppen, editors. Proceedings of the 14th AGILE International Conference on Geographic Information Science - Advancing Geoinformation Science for a Changing World, Utrecht, 2011. AGILE. ISBN 978-90-816960-1-2.

67. Pebesma, E., R. Bivand, 2011. Handling spatio-temporal data in R. AAG, Space-Time Symposium, Apr 12-15, 2011, Seattle, USA.

68. Pebesma, E., 2011. Grundlagen der raum-zeitlichen Modellierung und Analyse mit R. EDC Entwicklerforum workshop "Time & Space", 17. - 18.03.2011, Münster.

69. Pebesma, E., 2011. Raum-zeitliche Modellierung und Analyse mit R. EDC Entwicklerforum workshop "Time & Space", 17. - 18.03.2011, Münster.

70. Dan Cornford, Edzer Pebesma, Stefano Nativi, Matthew Williams, Christoph Stasch, Richard Jones, and Lydia Gerharz, 2011. Realising the Uncertainty Enabled Model Web. Abstract, EGU General Assembly, 2011.

71. Lydia E. Gerharz, Benjamin Proß, Christoph Stasch, and Edzer Pebesma, 2011. A Web-based Uncertainty-enabled Information System for Urban Air Quality Assessment. Abstract, EGU General Assembly, 2011.

72. Boluwade, A, Mateu, J, Pebesma, E and Cabral, P. (2011). Hydrologic Modelling and Uncertainty Analysis of Ungauged Watershed Using Mapwindow-SWAT. 34th IAHR World Congress, in Brisbane, Australia from 26 June to 1 July 2011. Theme/Sub-theme: Theme 1 - 1.1 Floods.

73. Dan Cornford, Stefano Nativi, Edzer Pebesma, 2010. Managing Uncertainty in Data and Models: UncertWeb. AGU Fall meeting, Dec 13-17, 2010, abstract in session IN14: Uncertainty, Error, and Quality of Observational Data.

74. Edzer Pebesma, 2010. Modelling uncertain and fuzzy spatial information. Abstract for the workshop on Multidimensional Geoinformation - advances in spatial information sciences towards modeling geo-processes (multiGI), Karlsruhe Institute for Technology, Oct 14-15 2010.

75. I.T. Stewart, H. Fritze, E. Pebesma, 2010. Is there acceleration in streamflow timing trends across western North American mountains? Global Change and the World's Mountains. Perth, Scotland, UK, 26-30 September 2010.

76. Katharina Henneböhl, Edzer Pebesma, Werner Müller, 2010. Efficient parametric variogram estimation for real-time interpolation of environmental monitoring data. Geostatistics for environmental applications, GeoENV 2010, Sept. 13-15, Gent, Belgium.

77. Lydia E. Gerharz, Edzer J. Pebesma, 2010. Accounting for uncertainties and change of support in spatio-temporal modelling of individual exposure to air pollution. Geostatistics for environmental applications, GeoENV 2010, Sept. 13-15, Gent, Belgium.

78. R. Jones, L. Bastin, D. Cornford, M. Williams, S. Nativi, E. Pebesma, 2009. Handling and communicating uncertainty in chained geospatial Web Services. Spatial Accuracy 2010.

79. Helle, Kristina B., Pebesma, Edzer J., 2009. Conservative Updating of Sampling Designs. Spatial Accuracy 2010.

80. Kristina Helle and Edzer Pebesma, 2010. Optimizing Spatio-Temporal Sampling Designs of Synchronous, Static, or Clustered Measurements. Geophysical Research Abstracts, Vol. 12, EGU2009-12462, EGU General Assembly 2009.

81. Edzer Pebesma, Lydia Gerharz, 2009. Visualizing uncertainty in spatio-temporal data. Spatial Accuracy 2010.

82. Dan Cornford, Richard Jones, Lucy Bastin, Matthew Williams, Edzer Pebesma, and Stefano Nativi, 2010. UncertWeb: chaining web services accounting for uncertainty. Geophysical Research Abstracts Vol. 12, EGU2010-PREVIEW, 2010 EGU General Assembly 2010.

83. Edzer Pebesma, Dan Cornford, and Jon Skøien. 2010. Methods and architectures for automated space-time interpolation. Geophysical Research Abstracts Vol. 12, EGU2010-11207, 2010 EGU General Assembly.

84. H.H. Fritze; I.T. Stewart-Frey; E.J. Pebesma, 2009. Snowmelt Runoff Regime Shifts Across Western North America. AGU Fall meeting, 14-18 december 2009, San Francisco. Abstract H33E-0930.

85. Lydia Gerharz, Edzer Pebesma, 2009. A modeling framework for estimating individual exposure to air pollution. 19th Annual conference of the international society for exposure science, Minneapolis, Nov 1-5, 2009.

86. Alexandre Zenie, Marta Blangiardo, Gavin Shaddick, Bruce Denby, Edzer Pebesma and Clive Sabel, 2009. Uncertainty Characterization and Visualization within the HEIMTSA project. Symposium "Characterizing and Communicating Uncertainties within Assessments of Human Exposures to Chemical Risks" (ID pvz73m) at 2009 SRA Annual Meeting "Risk Analysis: The Evolution of a Science" in Baltimore, Maryland on 6th-9th December 2009

87. Pebesma, E.J., K. Henneböhl, and J. O. Skøien, 2009. Developing automatic interpolation services: experiences from the INTAMAP FP6 project. Geophysical Research Abstracts, Vol. 11, EGU2009-11953, EGU General Assembly 2009.

88. Lydia E. Gerharz, Edzer J. Pebesma, 2009. Usability of interactive and non-interactive visualisation of uncertain geospatial information. Geoinformatik 2009.

89. Katharina Henneböhl, Edzer Pebesma, 2008. Providing R functionality through the OGC Web Processing Service. UseR! The R User Conference 2008, Technische Universität Dortmund, Germany, August 12-14, 2008.

90. Skøien, J.O., E.J. Pebesma, 2008. Real-time mapping in emergency situations - some preliminary results. Geophysical Research Abstracts, Vol. 10, EGU2008-A-09373, 2008 EGU General Assembly 2008.

91. Hiemstra, P., E. Pebesma, G.B.M. Heuvelink, C. Twenhöfel, 2008. Realtime automatic interpolation of ambient gamma dose rates from the Dutch Radioactivity Monitoring Network. In: U. Stöhlker (Ed.), Meeting of experts on "External Dose Rate Monitoring at the Schauinsland Intercalibration Site", Freiburg, Germany, November 28-30, 2007.

92. Skøien, J.O., E. Pebesma, O. Baume, Gerard Heuvelink, 2008. The INTAMAP project first results. In: U. Stöhlker (Ed.), Meeting of experts on "External Dose Rate Monitoring at the Schauinsland Intercalibration Site", Freiburg, Germany, November 28-30, 2007.

93. Skøien, J.O., E.J. Pebesma and G. Blöschl, 2007. Geostatistics for automatic estimation of environmental variables - simple solutions. Geophysical Research Abstracts, Vol. 9, 07879. SRef-ID: 1607-7962/gra/EGU2007-A-07879

94. O. Baume, J.O. Skøien, G.B.M. Heuvelink, E.J. Pebesma, 2007. Geostatistial aproach to data harmonization. Abstract, Presentation at StatGIS 2007, Sept 25-27 2007, Klagenfurt, Austria.

95. De Nijs, A.C.M., E.J. Pebesma, 2007. Spatial uncertainty in land use models. An alternative method to estimate uncertainty in logistic regression models. Proceedings of the 15th European Colloquium on Theoretical and Quantitative Geography. Also available as Chapter 8 in: Ton de Nijs, 2009: Modelling land use change: Improving the prediction of future land use patterns. PhD thesis, Utrecht University; Netherlands Geographical Studies 386; ISBN 978-90-6809-429-9.

96. J.O. Skøien, O. Baume, E.J. Pebesma, G.B.M. Heuvelink, 2007. Identifying and removing heterogeneities between monitoring networks. Abstract, Presentation at StatGIS 2007, Sept 25-27 2007, Klagenfurt, Austria.

97. Pebesma, E.J., Karssenberg, D., De Jong, K. 2006. Dynamic visualisation of spatial and spatio-temporal probability density functions. The Seventh International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences 5-7 July 2006, Lisbon, Portugal.

98. De Nijs, T., Pebesma, E.J., 2006. Uncertainties in logistic regression predictions: an application to land use change modelling. The Seventh International Symposium on Spatial Accuracy Assessment in

Natural Resources and Environmental Sciences 5-7 July 2006, Lisbon, Portugal.

99. R. Bivand, V. Gómez-Rubio, A. López-Quílez, E. Pebesma, P.J. Ribeiro, B. Rowlingson, 2006. R as an open source environment for spatial epidemiology. Spatial Epidemiology Conference, Imperial College, London, UK, 23-25 May 2006.

100. Briggs D.J., R. Beelen, G. Hoek, C. de Hoogh, E. Pebesma, G. Shaddick, D. Vienneau, 2005. Modelling high resolution variations in air pollution at the continental scale: A comparison of GIS-based methods. Program and Abstracts: The Seventeenth Conference of the International Society for Environmental Epidemiology (ISEE): Abstracts. Epidemiology 16 (5): S84-S84, SEP 2005.

101. Shaddick G, Kounali D, Briggs DJ, Beelen R, Hoek G, de Hoogh C, Pebesma E, Vienneau D, 2005. Using Bayesian hierarchical modelling to produce high resolution maps of air pollution in the EU. Program and Abstracts: The Seventeenth Conference of the International Society for Environmental Epidemiology (ISEE): Abstracts. Epidemiology 16 (5): S89-S89, SEP 2005

102. Straatsma, M., H. Middelkoop, E.J. Pebesma, C. Wesseling (2004) Mapping of vegetation characteristics using lidar and spectral remote sensing. In: N. Nouben and A.G. van Os (eds.), NCR-days 2004: Dealing with Floods within Constraints. NCR-publication 24-2004, Netherlands Centre for River Studies, Delft (ISSN 1568-234X).

103. Schuurmans, J.M., Bierkens, M.F.P, Uijlenhoet, R., Torfs, P., Pebesma, E.J. (2004) Estimating high resolution rainfall fields based on meteorological radar and rain gauges for operational water management. European Geosciences Union 1st General Assembly Nice, France, 25–30 April 2004

104. Bierkens, M.F.P; Pebesma, E.J. (2004). Space-time mapping of water table elevation using autoregressive external drift kriging. European Geosciences Union 1st General Assembly Nice, France, 25–30 April 2004

105. Edzer J. Pebesma, Jaap de Gruijter, Gerard B.M. Heuvelink (2004) A Method for Classifying Land Parcels as Receptive or Unreceptive to Nitrate Leaching. The combined TIES 2004 (The Fifteenth Annual Conference of The International Environmetrics Society) and ACCURACY 2004 (The Sixth International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences) meeting, Portland, Maine, USA, June 28 - July 1, 2004.

106. Roger Bivand, Edzer Pebesma and Barry Rowlingson (2004) Generic functions for spatial data. UseR! 2004 , The R User Conference, May 20-22, 2004, Vienna, Austria.

107. Pebesma, E.J., S.M. de Jong (2002) Predicting aboveground biomass using field data and high resolution spectral imaging data. TIES - The International Environmentrics Society - 2002 conference.

108. Pebesma, E.J. and G.B.M. Heuvelink (2001), Sequential simulation of Gaussian random fields with unknown mean function: an application to heavy metal pollution data. Abstract book 4th conference of the Working Group on Pedometrics of the International Union of Soil Science (Ed. M. van Meirvenne). Ghent University, Ghent (pp. 84-84).

109. Heuvelink, G.B.M. and E.J. Pebesma (2001), Is there anything wrong with the ordinary kriging variance? Abstract book 4th conference of the Working Group on Pedometrics of the International Union of Soil Science (Ed. M. van Meirvenne). Ghent University, Ghent (pp. 13-13).

4 Invited papers/presentations

1. Edzer Pebesma, 2022, Spatial Statistical Questions and Big Spatial Datasets. Invited talk, 63rd Annual Conference of the South African Statistical Association 28 November - 2 December 2022. (slides)

2. Edzer Pebesma, 2022. openEO: open science for Earth observation analytics. ESA Workshop on Open Innovation, Frascati, Nov 2-4, 2022.

3. Edzer Pebesma, 2021. R Spatial. Keynote, UseR!, 2021; youtube.

4. Edzer Pebesma, 2021. openEO API and processes. EO Data Cubes Interoperability. GEO and OGC Joint Workshop, Geneva, Apr 21-20, 2021.

5. Edzer Pebesma, 2019. From Data Science to Spatial Data Science. Keynote at Spatial Data Science Conference, Oct 16, 2019, NY. slides, video.

6. Edzer Pebesma, 2019. Towards Spatial Data Science. Jul 12, 2019, Keynote at Spatial Statistics 2019: Towards Spatial Data Science, Stiges, Spain, Jul 10-13, 2019. slides

7. Edzer Pebesma, 2019. Spatial Data Science with R. Jul 11, 2019, CREAF, Catalunya; http://www.creaf.cat/events/events/creaftalks-edzer-pebesma

8. Edzer Pebesma, 2018. Spatial Data Science with R. Nov 14, Digital Earth Colloquium Series, Univ of Goettingen (pdf).

9. Edzer Pebesma, 2018. Tidy spatial data analysis. Rstudio::conf 2018; Feb 2, 2018 (slides, video).

10. Edzer Pebesma, 2017. New developments in r-spatial. Keynote at *Hands-on Global Soil Information Facilities (GSIF)*, 15-19 May 2017, Wageningen, Netherlands (video).

11. Edzer Pebesma, 2017. Incentives and rewards in scientific software communities. Keynote, "Software and Services for Science (S3)", 2nd Conference on Non-Textual Information, May 10-11, 2017, TIB Hannover (slides video).

12. Edzer Pebesma, 2016. Simple Features Now on CRAN. R Consortium blog.

13. Edzer Pebesma, 2016. Scalable Spatiotemporal Geostatistics. Dept of Statistics, University of Innsbrueck, Dec 15, 2016 (pdf).

14. Edzer Pebesma, 2016. Reproducible Research in Practice. Reproducible Research Workshop, UZH, Zürich, Sept 13-14, 2016.

15. Edzer Pebesma, 2016. Breaking down barriers in the scientific use of EO data. EODC Forum 2016, 31st May – 1st June 2016.

16. Edzer Pebesma, 2016. Support of observations and predictions in spatial and temporal statistics: practical aspects and software challenges. DAGStat 2016, Mar 14-18 2016, Computational Statistics and Statistical Software section (pdf).

17. Edzer Pebesma, 2015. Meaningful spatial statistics. Geomatik Seminar, ETH Zürich, Nov 19, 2015.

18. Edzer Pebesma, 2015. On generating spatio-temporal data. Hunter College, CUNY, Geography Seminar Series Oct 5, 2015.

19. Edzer Pebesma, 2015. On generating spatio-temporal data. Wageningen University/Research Center; Sept 30, 2015.

20. Edzer Pebesma, 2014. Analyzing Spatial and Spatio-Temporal Data with R. Bay Area useR Group meeting, Wednesday, December 17, 2014.

21. Edzer Pebesma, Christoph Stasch, Benedikt Gräler, Simon Scheider, 2014. Meaningfully Integrating Big Earth Science Data. AGU fall meeting; invited contribution IN33A-3757 (abstract, e-poster).

22. E. Pebesma, 2014. Visualizing uncertainty in spatial and spatiotemporal field data. Keynote at workshop on *Visually-Supported Reasoning with Uncertainty* held during GIScience 2014, Sept 23, 2014 (slides).

23. E. Pebesma, 2014. Spatial and temporal support of meteorological observations and predictions. Keynote lecture at `http://www.dailymeteo.org`; abstract.

24. E. Pebesma, 2014. Are current spatial databases useful for meaningful analysis? Presentation held for an ad-hoc symposium in Utrecht, May 8, 2014 and as GI Forum/ERCIS lunch seminar in Münster, Apr 22, 2014.

25. E. Pebesma, 2014. Visualizing and communicating uncertainty in the earth and environmental sciences: a review. EGU General Assembly 2014, inivited contribution to session SSS11.1/ESSI3.6, *Communication of uncertainty about information in earth sciences.*

26. Edzer Pebesma, 29 Jan 2013. *Where do spatial statistics and geoinformatics meet?* Geodätischen Kolloquium der Leibniz Universität Hannover. (slides)

27. Edzer Pebesma, 2012. *The uncertainty-enabled model web: concepts and tools.* Workshop on Uncertainty Quantification for Climate and Environmental Models, UCL, 29 June 2012

28. Edzer Pebesma, 2011. *Spatial data quality and error propagation in spatio-temporal modelling in practice.* Keynote at 7th International Symposium on Spatial Data Quality (ISSDQ 2011): Raising awareness of Spatial Data Quality (Coimbra, PT, 12-14 October 2011).

29. Edzer Pebesma, 2010. *Modelling spatio-temporal data with R.* Invited lecture at GeoInfo 2010, November 28 to December 1, 2010, Campos do Jordão and on December 2, 2010 at INPE, São José dos Campos, São Paulo, Brazil.

30. Edzer Pebesma, 2010. *Modelling uncertain and fuzzy spatial information.* Abstract for the workshop on Multidimensional Geoinformation - advances in spatial information sciences towards modeling geo-processes (multiGI), Karlsruhe Institute for Technology, Oct 14-15 2010.

31. Edzer Pebesma, 2010. Open Geostatistics for Global Change. Inaugural lecture, Faculty of Geosciences, University of Münster, June 25, 2010.

32. Invited talk: *Interoperability and automated mapping: the past, the INTAMAP project, and the future.* Agaduc workshop, Dec 4, 2008.

5 Books, reports, book chapters, etc.

1. Cremer, Felix, Eid, Yomna, Gans, Fabian, Hassler, Sibylle, Osterthun, Arne, & Pebesma, Edzer. (2023). Overview of data cube technologies and review of other emerging technologies (NFDI4Earth Deliverable D2.5.1) (Version 1). Zenodo. https://doi.org/10.5281/zenodo.7951050

2. Sadeghi, Farzaneh, Keßler, Carsten, Eid, Yomna, Pebesma, Edzer, Teuscher, Balthasar, Werner, Martin, Purr, Christopher, & Sadikni, Remon. (2023). Mapping of existing educational resources and initial education and training needs within the Earth system science community (NFDI4Earth Deliverable D1.3.1). Zenodo. https://doi.org/10.5281/zenodo.7940195

3. Pebesma, Edzer; Bivand, Roger, 2023. Spatial Data Science: With Applications in R. CRC/Chapman & Hall, 314 pages, full-text online.

4. Pebesma, Edzer; Wagner, Wolfgang; Schramm, Matthias; Von Beringe, Alexandra; Paulik, Christoph; Neteler, Markus; Reiche, Johannes; Verbesselt, Jan; Dries, Jeroen; Goor, Erwin; Mistelbauer, Thomas; Briese, Christian; Notarnicola, Claudia; Monsorno, Roberto; Marin, Carlo; Jacob, Alexander; Kempeneers, Pieter; Soille, Pierre. (2017, November 23). OpenEO - a Common, Open Source Interface Between Earth Observation Data Infrastructures and Front-End Applications (Version 1.0). H2020 Project proposal, Zenodo.

5. G.B.M. Heuvelink, E. Pebesma, B. Gräler, 2015. Space-Time Geostatistics. In: S. Shekhar, H. Xiong and X. Zhou: Encyclopedia of GIS. Springer International Publishing. pages 1–7. 10.1007/978-3-319-23519-6_1647-1

6. Matt Duckham, Edzer Pebesma, Kathleen Stewart, Andrew U. Frank, 2014. Geographic Information Science. 8th International Conference, GIScience 2014, Vienna, Austria, September 24-26, 2014, Proceedings. Lecture Notes in Computer Science Volume 8728.

7. Kathleen Stewart, Edzer Pebesma, Gerhard Navratil, Paolo Fogliaroni, Matt Duckham (eds.) Extended Abstract Proceedings of the GIScience 2014. GEO.INFO 40, Department of Geodesy and Geoinformation, Vienna University of Technology.

8. Rehr, M., E. Pebesma, B. Gräler, 2013. Detecting outlying observations and structural changes in European air quality data. ETC/ACM Technical Paper 2012/16; Released: May 2013.

9. Christoph Stasch, Edzer Pebesma, Lydia Gerharz, Benedikt Gräler, 2013. Error-Aware Spatio-temporal Aggregation in the Model Web. In: Vandenbroucke, Danny; Bucher, Bénédicte; Crompvoets, Joep (Eds.) Geographic Information Science at the Heart of Europe. Lecture Notes in Geoinformation and Cartography. (pdf)

10. Bivand, R.S., E. Pebesma, V. Goméz-Rubio, 2013. Applied Spatial Data Analysis with R, Second edition. Springer, NY.

11. Edzer Pebesma, 2012. Profile: geoinformatics. Public service review: European science and technology - issue 16

12. Kristina B. Helle, Edzer Pebesma, 2012. Stationary Sampling Designs Based on Plume Simulations. Chapter 14, in: Jorge Mateu and Werner G. Müller (eds.), *Spatio-temporal Design: Advances in Efficient Data Acquisition*, Wiley, 348 pp.

13. Gräler, B., L. Gerharz, E. Pebesma, 2012. Spatio-temporal analysis and interpolation of PM10 measurements in Europe. ETC/ACM Technical Paper 2011/10; Released: 2012/01/30.

14. Gerharz, L., B. Gräler, E. Pebesma, 2011. Measurement artefacts and inhomogeneity detection. ETC/ACM Technical Paper 2011/8; Released 2011/12/06.

15. Schwering, A., E. Pebesma, Kai Behncke, 2011. Geoinformatik 2011 "Geochange". 15-17 Juni 2011, Münster, Germany. Konferenzband. IfgiPrints, band 41. 272 pp.

16. Dürrfeld, J., J. Bisier and E. Pebesma, 2011. An OGC Web Processing Service for automated interpolation. Book chapter, in: Advances in Web-based GIS, Mapping Services and Applications. Editor(s): Songnian Li; Suzana Dragicevic; Bert Veenendaal. CRC Press, 400 pp.

17. Henneböhl, K., L. Vinhas, E. pebesma and G. Câmara (Eds.), 2010. GIScience for environmental change. Symposium proceedings, Nov 27, 2010, Campos de Jordão (São Paulo), Brazil. ifgiPrints, Band 40; 66 pages.

18. Pebesma, E.J., 2009. How we build geostatistical models and deal with their output. In: J. Pilz (Ed.), Interfacing Geostatistics and GIS, Springer, Berlin, http://dx.doi.org/10.1007/978-3-540-33236-7.

19. Bivand, R.S., E.J. Pebesma, V. Goméz-Rubio, 2008. Applied spatial data analysis with R. Springer, New York.

20. Pebesma, E., M. Bishr, Th. Bartoschek (Eds.), 2008. GI-Days 2008. Proceedings of the 6th Geographic Information Days. June 16-18, 2008, Münster, Germany. IfGI prints 32. 337 pp.

21. Pebesma, E.J., R.N.M. Duin (2006). Spatial patterns of temporal change in North Sea sediment quality on different spatial scales. Unpublished report, available from http://www.geog.uu.nl/~pebesma/rikz/

22. Pebesma, E.J. (2005) Mapping radioactivity from monitoring data: automating the classical geostatistical approach. In: G. Dubois (Editor), Automatic mapping algorithms for routine and emergency monitoring data. Report on the Spatial Interpolation Comparison (SIC2004) exercise. Office for Official Publications of the European Communities, Luxembourg; EUR 21595 EN; ISBN: 92-894-9400-X (150 pp.)

23. De Jong, S.M., E. Pebesma, F.D. van der Meer, 2004. Spatial variability, mapping methods, image analysis and pixels. In: S.M. de Jong, F.D. van der Meer (eds), Remote sensing image analysis: including the spatial domain. Kluwer, Dordrecht, (359 pp), pp 17–35

24. Pebesma E.J. and A.M.F. Bio, 2002. Landsdekkende interpolatie van aanwezigheid van plantensoorten. ICG report 02/4, 59 + v pp, Utrecht University.

25. Pebesma, E.J., 2002. Interpolating sea bird densities: cokriging temporal changes and block aggregate estimates. ICG report 02/5, 21 + v pp., Utrecht University.

26. Pebesma, E.J., R.N.M. Duin, A.M.F. Bio, 2000. Spatial Interpolation of sea bird densities on the Dutch part of the North Sea. ICG report 00/10, 130 + v pages, Utrecht University.

27. Pebesma, E.J., 2001. Gstat user's manual. Technical report, Dept. of Physical Geography, Utrecht University, Utrecht, The Netherlands. (103 pp; PDF available from http://www.gstat.org/ or here)

28. Stein, A., E. Pebesma (ed.), 1999. GIS en waarachtig! Symposium statistische software. Amsterdam, ISBN 90-9013205-8. 152 pages (in Dutch).

29. Pebesma, E.J., 1996, Mapping Groundwater Quality in the Netherlands. Utrecht University, Utrecht. Netherlands Geographical Studies 199 . (PhD thesis; pdf).

30. Pebesma, E.J. and J.W. de Kwaadsteniet, 1995, Een landsdekkend beeld van veranderingen in de Nederlandse grondwaterkwaliteit op 5 tot 17 meter diepte (*Maps of temporal changes in groundwater quality in the Netherlands at 5 – 17 metre depth*). National Institute of Public Health and the Environment, Bilthoven. Report No. 714810015 (in Dutch).

31. Pebesma, E.J., and J.W. de Kwaadsteniet, 1994. Een landsdekkend beeld van de Nederlandse grondwaterkwaliteit op 5 tot 17 meter diepte in 1991 *(Maps of groundwater quality in the Netherlands at 5 – 17 metre depth in 1991)*. National Institute of Public Health and the Environment, Bilthoven. Report No. 714810014 (in Dutch).

6 Standard documents

1. Uncertainty Markup Language (UncertML). M. Williams, D. Cornford, L. Bastin and E. Pebesma (eds.) OGC Discussion paper 08-122r2 (pdf). See also http://www.uncertml.org/.

7 Published reviews

1. E. Pebesma, 2021. Review of: Christopher K. Wikle, Andrew Zammit-Mangion and Noel Cressie (2019): Spatio-temporal Statistics with R. Chapman and Hall/CRC, 396 pp. , ISBN 978-1-1387-1113-6. Statistical Papers, (), 1-2. DOI 10.1007/s00362-021-01224-5 https://link.springer.com/article/10.1007/021-01224-5

2. Pebesma, E., M. Appel, 2019. Interactive comment on "Earth system data cubesunravel global multivariate dynamics" by Miguel D. Mahecha et al. Earth System Dynamics, https://www.earth-syst-dynam-discuss.net/esd-2019-62/

3. Pebesma, E. Package Review of osmdata. Software review for ROpenSci.

4. Pebesma, E. "Extending R", by John M. Chambers. Book review, Journal of Agricultural, Biological, and Environmental Statistics.

5. Pebesma, E. Interactive discussion: Review of: Ordinary kriging as a tool to estimate historical daily streamflow records; HESSD.

6. Pebesma, E. Interactive comment on "An open and extensible framework for spatially explicit land use change modelling in R: the lulccR package (0.1.0)" by S. Moulds et al.

7. Pebesma, E. Interactive comment on "Topological and canonical kriging for design-flood prediction in ungauged catchments: an improvement over a traditional regional regression approach?" by S. A. Archfield et al.

8. Gräler, B., E. Pebesma, Review of "Interpolation of groundwater quality parameters with some values below the detection limit", by A. Bárdossy.

9. Pebesma, E., 2010. Is PSBI still a geostatistical interpolation method? Interactive comment on "Geostatistical regionalization of low-flow indices: PSBI and Top-Kriging" by S. Castiglioni et al.

10. Pebesma, E.J., 2004. Review of: *Image analysis, Random Fields and Markov Chain Monte Carlo Methods, a mathematical introduction*, by G. Winkler. Kwantitatieve methoden 72.,

11. Pebesma, E.J., 2003. Review of: *The elements of statistical learning*, by T. Hastie, R. Tibshirani, and J. Friedman. The International Environmetrics Society Newsletter, Volume 9, No 1, p. 13.

12. Pebesma, E.J., 1999. Review of: *Multivariate Geostatistics; An Introduction with Applications*, by H. Wackernagel. Earth-Science Reviews 48, pp. 132-133.

8 Under review/accepted for publication

1. Brian Pondi, Marius Appel, Edzer Pebesma, accepted. OpenEOcubes: an open-source and lightweight R-based RESTful web service for analyzing Earth Observation data cubes. Earth Science Informatics.

2. Carles Milà, Marvin Ludwig, Edzer Pebesma, Cathryn Tonne, and Hanna Meyer, submitted. Random forests with spatial proxies for environmental modelling: opportunities and pitfalls

3. Alexander Jacob, Jeroen Dries, Edzer Pebesma, Benjamin Schumacher, Daniel Thiex, Michele Claus, Basil Tufail, Valeria Ardizzone, Matthias Mohr, Christian Briese, Patrick Griffiths, 2023. openEO Platform - federated data access and processing using open and commercial earth observation data. Submitted to IGARSS 2023.

4. Benjamin Schumacher, Patrick Griffiths, Edzer Pebesma, Jeroen Dries, Alexander Jacob, Daniel Thiex, Matthias Mohr, and Christian Briese. 2023. openEO Platform - showcasing a federated, accessible platform for reproducible large-scale Earth Observation analysis. submitted to ESSI3.5: Enabling reproducibility in Earth System Science research; EGU abstract

5. Jairo Arturo Torres Matallana, Benedikt Gräler, Ulrich Leopold and Edzer Pebesma, submitted. Spatio-temporal rainfall stochastic simulation for distributed GIS hydrologic and stormwater modelling accounting for uncertainty propagation.

6. Kati Krähnert, Melinda Vigh, Christian Knoth, Henning Teickner, Myagmartseren Purevtseren, Munkhnaran Sugar, Edzer Pebesma, submitted. Household mobility as response to an extreme weather event: Insights from novel trajectory data.

9 Editorial boards/guest editorials

1. Co-Editor-in-Chief, Journal of Statistical Software, Feb 2015 – 2021.
2. Associate editor, Spatial Statistics, 2011 – 2019 (terminated because of lacking progress in project DEAL).
3. Co-Editor-in-Chief, Computers and Geosciences, May 2014 – Dec 2017.
4. Associate editor, Journal of Statistical Software, Jun 2013 – Feb 2015.
5. Associate editor, Computers and Geosciences, Apr 2013 – May 2014.
6. Editorial board member, Environments, 2013 – 2014.
7. Editorial board, Catena, 2006 – 2009
8. Special Section editor, with Thomas Romary on a Spatial Statistics special issue on GeoENV 2014.
9. T. Hengl, E. Pebesma R. J. Hijmans, 2015. Spatial and spatio-temporal modeling of meteorological and climatic variables using Open Source software. Spatial Statistics, in press.
10. Special Issue editor, with Roger Bivand and Paulo Justiano Ribeiro Jr, for a Journal of Statistical Software special issue on Spatial Statistics
11. Gerard Heuvelink, Edzer Pebesma, Alfred Stein, 2013. Spatial statistics for mapping the environment. International Journal of Applied Earth Observation and Geoinformation Volume 22, Pages 1–2.
12. A. Stein, E. Pebesma and G. Heuvelink, 2012. Editorial. Spatial Statistics Vol. 1, pages 1-2.
13. Alfred Stein, Edzer Pebesma and Gerard Heuvelink, 2011. Editorial. Procedia Environmental Sciences, Volume 7, Pages 1-400. Spatial Statistics 2011: Mapping Global Change
14. Dubois, G. D. Cornford, D. Hristopulos, E. Pebesma, and J. Pilz, 2010. Introduction to this special issue on Geoinformatics for Environmental Surveillance. Computers & Geosciences 37, 277-279.

10 Tutorials/workshops etc.

1. Edzer Pebesma, 2017. R / Python and Big Data; openEO. EDC Workshop "Big Data Analytics & GIS" September 21-22, 2017. Münster. slides.

2. Edzer Pebesma, 2017. Spatial data in R: new directions. Workshop, UseR! 2017, Jul 4-7, Brussels, Belgium; slides.

3. Daniel Nüst, Edzer Pebesma, Vicky Steeves, 2017. Reproducible computational research in the publication cycle . Short course, EGU 2017, SC81.

4. Handling and analyzing spatial, spatiotemporal and movement data. UseR!, The R User Conference 2016, Stanford, Jun 27-30, 2016.

5. Chue Hong, Neil; Hammitzsch, Martin; Hufton, Andrew; Neteler, Markus; Pebesma, Edzer; van Edig, Xenia; Wenig, Philip, 2015. Open Science goes Geo – Part II: Scientific Software. Short course, held at the European Geosciences Union General Assembly 2015. The talks are available at YouTube, slides at Zenodo.

6. Various geostat-course.org video's: 2012 2014

7. Analysing spatio-temporal data with R. Agile, Leuven, May 14, 2013.

8. Software for spatio-temporal analysis. Session on Spatial Statistics 2013.

9. Analysing spatio-temporal data with R. Workshop at Spatial Statistics, Jun 4, 2013.

10. Handling and Analyzing Spatio-temporal Data in R. Tutorial at UseR! 2011, The R User Conference 2011, August 16-18 2011 University of Warwick, Coventry, UK

11. Spatiotemporal Data Handling in R. Tutorial at: GeoINFO 2010, XI Brazilian Symposium on GeoInformatics. November 29-Dec 1, 2010 at Campos do Jordao, Brazil.

12. Handling and analyzing spatio-temporal data in R, Workshop, 21-22 Mar 2011 Workshop at institute for geoinformatics, University of Muenster, Germany.

13. GI science for improving risk and resource management in the Brazilian Amazon. Gilberto Câmara, Edzer Pebesma and Giovana Mira de Espindola. Tuturial at Geoinformatik 2011, 15-17 June 2011, Münster, Germany.

14. GI science for environmental change: use cases the Brazilian Amazon. Giovana Mira de Espindola, Gilberto Câmara and Edzer Pebesma. Workshop at Geoinformatik 2011, 15-17 June 2011,Münster, Germany.

11 Published software tutorials (R package vignettes or task views)

1. Pebesma, E., R. Bivand, 2005. S Classes and Methods for Spatial Data: the sp Package. Vignette in R package sp
2. Pebesma, E., 2011. sp: overlay and aggregation. Vignette in R package sp
3. Pebesma, E., 2013. Customising spatial data classes and methods, in R package sp
4. Pebesma, E., 2011. `spacetime`: Spatio-Temporal Data in R. Vignette in R package spacetime
5. Pebesma, E., 2011. Spatio-temporal overlay and aggregation. Vignette in R package spacetime
6. Pebesma, E., 2011. Spatio-temporal objects to proxy a PostgreSQL table. Vignette in R package spacetime
7. Pebesma, E., 2011. The meuse data set: a brief tutorial for the gstat R package. Vignette in R package gstat
8. Pebesma, E., 2011. The pairwise relative semivariogram. Vignette in R package gstat
9. Pebesma, E., 2011. Spatio-temporal geostatistics using gstat. Vignette in R package gstat
10. Pebesma, E., 2013. CRAN Task View: Handling and Analyzing Spatio-Temporal Data
11. Pebesma, E, 2016. Units of Measurement for R Vectors: an Introduction

12 Google Scholar link

Link to Google Scholar