Schriftenverzeichnis
List of Publications

Hannes Taubenböck
Dr.rer.nat.

Peer-reviewed Journals

Taubenböck H, Wurm M, Geiß C, Dech S & Siedentop S (2019): *Urbanization between compactness and dispersion – Designing a spatial model for measuring 2D binary settlement landscape configurations.* International Journal of Digital Earth. vol. 12(6), pp. 679-698.

Taubenböck H, Gerten C, Rusche K, Siedentop S & Wurm M (2019): *Patterns of Eastern European Urbanisation in the Mirror of Western Trends – Convergent, Unique or Hybrid?* Environment and Planning B. pp. 1-20. DOI: 10.1177/2399808319846902.

Geiß, C, Aravena Pelizari P, Blickensdörfer L & **Taubenböck H** (2019): *Virtual support vector machines with self-learning strategy for classification of multispectral remote sensing imagery.* ISPRS Journal of Photogrammetry and Remote Sensing. vol. 151, pp. 42-58.

Geiß C, Leichtle T, Wurm M, Aravena Pelizari P, Standfuß I, Zhu XX, So E, Siedentop S, Esch T, **Taubenböck H** (2019): *Large-Area Characterization of Urban Morphology – Mapping Built-Up Height and Density with the TanDEM-X Mission and Sentinel-2.* IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing.

Shi L, **Taubenböck H**, Zhang Z, Liu F & Wurm M (2019): *Urbanization in China from the end of 1980s until 2010 – Spatial dynamics and patterns of growth using EO-data.* International Journal of Digital Earth. vol. 12(1), pp. 78-94.

Wurm M, Stark, T, Zhu, XX, Weigand M, & **Taubenböck H** (2019): *Semantic segmentation of slums in satellite images using transfer learning on fully convolutional neural networks.* ISPRS Journal of Photogrammetry and Remote Sensing. vol. 150, pp. 59-69.

Zhu Z, Zhou Y, Seto K, Stokes E, Deng C, Pickett STA & **Taubenböck H** (2019): *Understanding an urbanizing planet: Strategic directions for remote sensing.* Remote Sensing of Environment. vol. 228, pp. 164-182.

Taubenböck H, Kraff N & Wurm M (2018): *The morphology of the Arrival City – A global categorization based on literature surveys and remotely sensed data*. Applied Geography, vol. 92, pp. 150-167.

Taubenböck H, Staab J, Zhu XX, Geiß C, Dech S & Wurm M (2018): *Are the poor digitally left behind? Analyzing urban divides using remote sensing and twitter data*. ISPRS Internatl. Journal of Geo-Information. vol. 7(8), 304, pp. 1-18.

Aravena Pelizari P, Spröhnle K, Geiß C, Schöpfer E, Plank S & **Taubenböck H** (2018): Multi-sensor feature fusion for very high spatial resolution built-up area extraction in temporary settlements. Remote Sensing of Environment. 209, pp. 793-807.

Friesen J, **Taubenböck H**, Wurm M & Pelz P (2018): *The similar size of slums*. Habitat International, vol. 73, pp. 79-88.

Geiß C, Thoma M & **Taubenböck H** (2018): *Cost-sensitive multitask active learning for characterization of urban environments with remote sensing*. IEEE Geoscience and Remote Sensing Letters. vol. 15(6), pp. 922-926.

Kang J, Körner M, Wang Y, **Taubenböck H** & Zhu X (2018): *Building instances classification using street view images*. ISPRS Journal of Photogrammetry and Remote Sensing. vol. 145, pp. 44-59.

Kuffer M, Pfeffer K, Sliuzas R, **Taubenböck H**, Baud, I & van Maarseveen M (2018): *Capturing the urban divide in nighttime light images from the International Space Station*. IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing, vol. 11(8), pp. 2578-2586.

Wurm M & **Taubenböck H** (2018): *Detecting social groups from space – Remote sensing-based mapping of morphological slums and assessment with income data*. Remote Sensing Letters. vol. 9(1), pp. 41-50.

Wentz EA, York AM, Alberti M, Conrow L, Fischer H, Inostroza L, Jantz C, Pickett STA, Seto KC & **Taubenböck H** (2018): *Six fundamental aspects for conceptualizing multidimensional urban form*. Landscape and Urban Planning, vol. 179, pp. 55-62.

Taubenböck H, Standfuß I, Wurm M, Krehl A & Siedentop S (2017): *Measuring morphologic polycentricity – A comparative analysis of urban mass concentrations using remote sensing data*. Computers, Environment and Urban Systems, vol. 64, pp 42-56.

Taubenböck H, Ferstl J & Dech S (2017): *Regions set in stone – Classifying and categorizing regions in Europe by settlement patterns derived from EO-data.* ISPRS Internatl. Journal of Geo-Information, 6(2), pp. 1-27.

Geiß C, Schauß A, Riedlinger T, Dech S, Zelaya C, Guzmann N, Hube M, Arsanjani J & **Taubenböck H** (2017): *Joint Use of Remote Sensing Data and Volunteered Geographic Information for Exposure Estimation: Evidence from Valparaíso, Chile.* Natural Hazards. Vol. 86, supplement 1, pp. 81-105.

Leichtle T, Geiß C, Wurm M, Lakes T & **Taubenböck H** (2017): *Unsupervised change detection in VHR remote sensing imagery – an object-based clustering approach in an urban environment.* International Journal of Applied Earth Observation & Geoinformation, 54, pp. 15-27.

Wei C, **Taubenböck H** & Blaschke T (2017): *Measuring urban agglomeration using city-scale daysmetric population map: a study in the Pearl River Delta, China.* Habitat International. 59, pp. 32-43.

Wurm M, **Taubenböck H**, Weigand M & Schmitt A (2017): *Slum mapping based on multi-scale texture features in polarimetric SAR data.* Remote Sensing of Environment, 194, pp. 190-204.

Taubenböck H, Standfuß I, Klotz M & Wurm M (2016): *The physical density of the city – Deconstruction of the delusive density measure with evidence from two European megacities.* ISPRS Internatl. Journal of Geo-Information, 5(11), pp. 1-24.

Klotz M, Kemper T, Geiß C, Esch T & **Taubenböck H** (2016): *How good is the map? A multi-scale cross-comparison framework for global settlement layers: evidence from Central Europe.* Remote Sensing of Environment, 178, pp. 191.212.

Georg I, Blaschke T & **Taubenböck H** (2016): *New spatial dimensions of global cityscapes: From reviewing existing concepts to conceptual spatial approaches.* International Journal of Geographical Sciences. 26(3), pp. 355-380.

Taubenböck H & Wiesner M (2015): *The spatial network of megaregions – Types of connectivity between cities based on settlement patterns derived from EO-data.* Computers, Environment & Urban Systems. vol. 54, pp. 165-180.

Geiß C & **Taubenböck H** (2015): *Object-based Post-classification Relearning.* IEEE Geoscience and Remote Sensing Letters. vol 12., no. 11, pp. 2336-2340.

Geiß C, Wurm M, Breunig M, Felbier A & **Taubenböck H** (2015): *Normalization of TanDEM-X DSM data in urban environments with morphological filters.* IEEE Transactions on Geoscience & Remote Sensing, vol. 53, no. 8, pp. 4348-4362.

Geiß C, Aravena Pelizari P, Marconcini M, Sengara W, Edwards M, Lakes T & **Taubenböck H** (2015): *Estimation of seismic building structural types using multi-sensor remote sensing and machine learning techniques.* ISPRS J of Photogrammetry & Remote Sensing. vol. 104, pp. 175-188.

Taubenböck H & Kraff N (2014): *The physical face of slums – A structural comparison of slums in Mumbai, India based on remotely sensed data.* Journal of Housing & the Built Environment. vol. 29, issue 1, pp. 15-38.

Taubenböck H, Wiesner M, Felbier A, Marconcini M, Esch T & Dech S (2014): *New dimensions of urban landscapes: The spatio-temporal evolution from a polynuclei area to a mega-region based on remote sensing data.* Applied Geography. vol. 47, pp. 137-153.

Taubenböck H & Geiß C (2014): *Vulnerability and resilience research – a critical perspective.* Int J Disaster Risk Sci Vol. 5, pp. 86-87.

Wurm M, d'Angelo P, Reinartz P & **Taubenböck H** (2014): *Investigating the applicability of Cartosat-1 DEMs and topographic maps to localize large-area urban mass concentrations.* Journal of Selected Topics in Applied Earth Observation & Remote Sensing. vol. 7(11), pp. 4138-4152.

Taubenböck H, Klotz M, Wurm M, Schmieder J, Wagner B, Wooster M, Esch T & Dech S (2013): *Delineation of Central Business Districts in mega city regions using remotely sensed data.* Remote Sensing of Environment, 136, 386-401.

Taubenböck H, Goseberg N, Lämmel G, Setiadi N, Schlurmann T, Nagel K, Siegert F, Birkmann J, Traub KP, Dech S, Keuck V, Lehmann F, Strunz G & Klüpfel H (2013): *Risk Mitigation at the „Last-Mile": From Science to Action by the example of Padang, Indonesia.* Natural Hazards. vol. 65(1), pp. 915-945.

Geiß C & **Taubenböck H** (2013): *Remote Sensing contributing to assess earthquake risk – from a literature review towards a road map.* Natural Hazards. Volume 68, Issue 1, pp. 7-48.

Esch T, Marconcini M, Felbier A, Roth A, Heldens W, Huber M, Schwinger M, **Taubenböck H**, Müller A & Dech S (2013): *Urban footprint processor – Fully automated processing chain generating settlement masks from global data of the TanDEM-X mission.* IEEE Geoscience and Remote Sensing Letters. Vol 10, no. 6, November 2013, pp. 1617-1621.

Taubenböck H, Esch T, Felbier A, Wiesner M, Roth A & Dech S (2012): *Monitoring of mega cities from space.* Remote Sensing of Environment, vol. 117, pp. 162-176.

Taubenböck H, Felbier A, Esch T, Roth A & Dech S (2012): *Pixel-based classification algorithm for mapping urban footprints from radar data – a case study for RADARSAT-2.* Can. J. Remote Sensing, vol 38, no. 3, pp. 211-222.

Esch T, **Taubenböck H**, Roth A, Heldens W, Felbier A, Thiel M, Schmidt M, Müller A & Dech S (2012): *TanDEM-X mission: New perspectives for the inventory and monitoring of global settlement patterns.* Journal of Applied Remote Sensing. vol 6., issue 1, 21 pages.

Wurm M, **Taubenböck H**, Schardt M, Esch T & Dech S (2011): *Object-based image information fusion using multisensor earth observation data over urban areas.* International Journal of Image and Data Fusion, 2(2), 121-147.

Taubenböck H, Esch T, Felbier A, Roth A & Dech S (2011): *Pattern-based accuracy assessment of an urban footprint classification using TerraSAR-X data.* IEEE Geoscience and Remote Sensing Letters. vol. 8; No. 2; pp. 278-282.

Taubenböck H, Wurm M, Netzband M, Zwenzner H, Roth A, Rahmann A & Dech S (2011): *Flood risks in urbanized areas – Multi-sensoral approaches using remotely sensed data for risk management.* Nat. Hazards & Earth Sys. Sci., vol. 11, pp. 431-444.

Taubenböck H, Esch T, Wurm M, Roth A & Dech S (2010): *Object-based feature extraction using high spatial resolution satellite data of urban areas.* Journal of Spatial Science, vol. 55, no. 1, pp. 117-133.

Taubenböck H, Goseberg N, Setiadi N, Lämmel G, Moder F, Oczipka M, Klüpfel H, Wahl R, Schlurmann T, Strunz G, Birkmann J, Nagel K, Siegert F, Lehmann F, Dech S, Gress A, Klein R (2009): *Last-Mile preparation for a potential disaster – Interdisciplinary approach towards tsunami early warning and an evacuation information system for the coastal city of Padang, Indonesia.* Nat. Hazards & Earth Sys. Sci., vol. 9, pp. 1509-1528.

Taubenböck H, Wegmann M, Roth A, Mehl H & Dech S (2009): *Urbanization in India – Spatiotemporal analysis using remote sensing data.* Computers, Environment and Urban Systems, vol. 33, pp 179-188.

Taubenböck H, Post J, Roth A, Zosseder K, Strunz G & Dech S (2008): *A conceptual vulnerability and risk framework as outline to identify capabilities of remote sensing.* Nat. Hazards and Earth Sys. Sci., vol. 8, no. 3, pp. 409-420.

Taubenböck H, Habermeyer M, Roth A & Dech S (2006): *Automated allocation of highly-structured urban areas in homogeneous zones from remote sensing data by Savitzky-Golay Filtering and curve sketching.* IEEE Geoscience & Remote Sensing Letters. Vol. 3, Issue 4, pp. 532-536.

Books

Taubenböck H (2019): *Remote Sensing for the Analysis of Global Urbanization.* DLR-Research Report 2019-10. Habilitation Thesis, University Würzburg, 600 p., ISSN 1434-8454.

Taubenböck H, Wurm M, Esch T & Dech S (Hrsg.) (2015): *Globale Urbanisierung – Perspektive aus dem All.* Berlin Heidelberg, SpringerSpektrum. S. 297.

Taubenböck H & Dech S (Hrsg.) (2010): *Fernerkundung im urbanen Raum – Erdbeobachtung auf dem Weg zur Planungspraxis.* Wissenschaftliche Buchgesellschaft Darmstadt. August 2010. S. 192.

Taubenböck H (2008): *Vulnerabilitätsabschätzung der Megacity Istanbul mit Methoden der Fernerkundung.* Dissertation. Universität Würzburg; p. 178. ISBN-10: 3639083180.

Special Issues

Taubenböck H & Geiß C (2017): Special Issue in the Journal "Natural Hazards": Title: "*Geospatial data for multiscale mapping and characterization of elements at risk.*" Volume 86, issue 1.

Taubenböck H & Strunz G (2013): Special Issue in the Journal "Natural Hazards": Title: "*Remote Sensing contributing to mapping earthquake vulnerability and effects*" Volume 68, issue 1 ISSN: 0921-030X (Print) 1573-0840 (Online)

Invited presentations:

Taubenböck H (2019): Globaler Wandel im Zeitalter des Anthropozäns – Perspektiven aus dem All. InnovationCity Roll Out Abschlussveranstaltung, Herne, 01.07.2019.

Taubenböck H (2019): Das Jahrhundert der Städte – Perspektiven aus dem All. Urania Berlin, 29.04.2019.

Taubenböck H & Safi K (2019): Space-borne technologies to monitor the transformation of the world and its capabilities for macroecology. Keynote at the macroecology 2019 conference, Würzburg, 11.03.2019.

Taubenböck H (2019): Distanz schafft Klarheit – ein kritischer fernerkundlicher Blick auf die Urbanisierung unseres Planeten. Keynote beim Sächsischen GIS-Forum, 30.01.2019.

Taubenböck H (2018): Dynamik und Formen weltweiter Urbanisierung. Oskar-von-Miller Forum, München, 06.12. 2018.

Taubenböck H (2018): Fernerkundung aus dem All – Andere Zahlen für bessere Entscheidungen? Wiesbaden. 22.11. 2018.

Taubenböck H (2018): Das Jahrhundert der Städte – Perspektiven aus dem All. Ringvorlesung Universität Köln. 23.10.2018.

Taubenböck H (2018): The future will be urban – A responsibility for urban remote sensing. Keynote at the EARSeL Urban Remote Sensing Special Interest Group, Bochum, Germany, 26.09.2018.

Taubenböck H (2018): Approaching poverty from outer space. Capabilities, ideas and challenges. Keynote at the Workshop 'Examining Dynamics of Deprived Settlements in Different Geographic Contexts; Standards and Transferability. IAS, Amsterdam, 02.07.2018.

Taubenböck H (2018): Fernerkundliche Nachweise der globalen Urbanisierung. Keynote at IÖR Jahrestagung, Dresden, 06.06.2018.

Taubenböck H (2018): Expanding cities – diminishing space – A perspective from outer space. Keynote at Real CORP, Vienna, Austria, 04.04.2018.

Taubenböck H (2018): Urbanization is transforming our world – Perspectives from space. Geographisches Kolloquium der Universität Kiel, 15.01.2018.

Taubenböck H (2017): The Morphology of Slums – Analyzing Slums across the Globe Using Earth Observation Data. Conference ‚Dangerous Landscapes', Hannover, 27.11.2017.

Taubenböck H (2017): Die globale Transformation der Städte – Was erwartet uns? Verband Beratender Ingenieure, VBI Landesverband Saarland. Vortrag und Podiumsdiskussion mit Umweltminister und Leiter der Obersten Landesbaubehörde. 02.11.2017.

Taubenböck H (2017): Big Data – Key for future Geoinformation services. Keynote at the 2nd GeoInformation Symposium, Berlin, 22.06.2017.

Taubenböck H (2017): Urbane Armut – Globale Wissenslücken durch Big Earth Data schließen. DLR Forschungstag. Köln. 26.04.2017.

Taubenböck H (2017): Die globale Transformation der Städte – Was erwartet uns? Arbeitstagung der Prüfingenieure, Baden-Baden. 23.06.2017.

Taubenböck H (2016): Die globale Transformation der Städte – Monitoring mit Methoden der Fernerkundung; Deutsche Gesellschaft für Kartographie und der AG Geomatik im Geographischen Institut der Ruhr-Universität Bochum.

Taubenböck H (2016): „Globale Urbanisierung – Perspektive aus dem All"; Presentation at the „Fachgruppe GIS & Vermessung" of VBI, Berlin,13.05.2016

Taubenböck H (2016): Cities from Space: Monitoring the Global Process of Urbanization. Invited Presentation and Panel discussion. SPADE Conference, Berlin.

Taubenböck H (2016): „Die globale Transformation der Städte – Monitoring mit Methoden der Fernerkundung"; Keynote and Panel Discussion at the VBI Bundeskongress in Leipzig.

Taubenböck H (2015): Population assessment using Earth observation data. Vienna Institute of Demography, Vienna, Austria.

Taubenböck H (2015): Fernerkundung zur Analyse von Landschaftsveränderungen. Workshop der Koreanologie Vienna, Austria.

Taubenböck H (2015): Globale Urbanisierung – Perspektiven aus dem Weltall. Münchner Wissenschaftstage. November, 2015.

Taubenböck H (2015): Cities from Space: Monitoring the Global Process of Urbanization. TechNet Europe Conference, Berlin.

Taubenböck H (2014): "Urban Remote Sensing at DLR"; Presentation at Technical Consultative Group Meeting "Global Urban Growth Data Initiative" on invitation by the World Bank; ESA in Fracati, Italy.

Taubenböck H (2014): Erdbeobachtung zur Abschätzung von Vulnerabilität. Workshop zu Klimavulnerabilität der Universität Hamburg.

Taubenböck H (2014): The rise of cities: Monitoring urbanization from space with a special focus on Turkey. ILA Berlin – Turkish-German Round Table. Berlin.

Taubenböck H (2013): Does distance bring clarity? Remotely sensing cities. Presentation at EPFL in Lausanne, Switzerland.

Taubenböck H (2013): ‚Remote Sensing' – Satellitengestützte Methoden für das Katastrophenmanagement. Keynote at the Workshop on re-insurance organized by GuyCarpenter in Köln/Bonn.

Taubenböck H (2013): "Quo Vadis" Urban Remote Sensing? Keynote at the Joint Urban Remote Sensing Event (JURSE), Sao Paulo, Brazil.