

# Big Data Analytics Project project: Publication list

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The publications listed in this document correspond to all publications registered in pubsy and containing at least one co-author from the Big Data Analytics Platform (BDAP) project. Numerous publications are the result of fruitful collaborations with other JRC projects and external partners. Please note that the project started as a pilot project on Big Data back in 2015. Publications by team members prior to this date are not listed in this document.

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## 1 Books

- [1] P. Soille, S. Loekken, and S. Albani, Eds., *Proc. of the 2021 Conference on Big Data from Space (BiDS'21)*, ESA-JRC-SatCen, Munich, Germany: Publications Office of the European Union, Feb. 2021. DOI: 10.2760/125905.
- [2] P. Soille, S. Loekken, and S. Albani, Eds., *Proc. of the 2019 Conference on Big Data from Space (BiDS'19)*, ESA-JRC-SatCen, Munich, Germany: Publications Office of the European Union, Feb. 2019. DOI: 10.2760/848593.

- [3] P. Soille and P. Marchetti, Eds., *Proc. of the 2017 Conference on Big Data from Space (BiDS'17)*, ESA-JRC-SatCen, Toulouse, France: Publications Office of the European Union, Nov. 2017. DOI: 10.2760/383579.
- [4] P. Soille and P. Marchetti, Eds., *Proc. of the 2016 Conference on Big Data from Space (BiDS'16)*, ESA-JRC-SatCen, Tenerife, Spain: Publications Office of the European Union, Mar. 2016. DOI: 10.2788/854791.
- [5] P. Soille and P. Marchetti, Eds., *Proc. of the 2014 Conference on Big Data from Space (BiDS'14)*, ESA-JRC-SatCen, Frascati, Italy: Publications Office of the European Union, Nov. 2014. DOI: 10.2788/1823.

## 2 Journal papers

- [1] R. d'Andrimont, A. Verhegghen, G. Lemoine, P. Kempeneers, M. Meroni, and M. van der Velde, "From parcel to continental scale – A first European crop type map based on Sentinel-1 and LUCAS copernicus in-situ observations," *Remote Sensing of Environment*, vol. 266, p. 112 708, 2021. DOI: 10.1016/j.rse.2021.112708.
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- [3] V. Syrris and S. Loekken, "Editorial of special issue: "machine and deep learning for earth observation data analysis"," *Remote Sensing*, vol. 13, 2021. DOI: 10.3390/rs13142758.
- [4] M. Schramm, E. Pebesma, M. Milenković, L. Foresta, J. Dries, A. Jacob, W. Wagner, M. Mohr, M. Neteler, M. Kadunc, T. Miksa, P. Kempeneers, J. Verbesselt, B. Gößwein, C. Navacchi, S. Lippens, and J. Reiche, "The openEO API: Harmonising the use of Earth observation cloud services using virtual data cube functionalities," *Remote Sensing*, vol. 13 (6), 2021. DOI: 10.3390/rs13061125.
- [5] V. Syrris, O. Pesek, and P. Soille, "SatImNet: Structuring training data for facilitating enhanced machine learning on satellite imagery," *Remote Sensing*, 2020. DOI: 10.3390/rs12203358.
- [6] V. Syrris, C. Corbane, M. Pesaresi, and P. Soille, "Mosaicking Copernicus Sentinel-1 data at global scale," *IEEE Transactions on Big Data*, vol. 6 (3), pp. 547–557, Sep. 2020. DOI: 10.1109/TBDATA.2018.2846265.
- [7] M. Datcu, J. Lemoigne, S. Loekken, P. Soille, and G.-S. Xia, "Special issue on big data from space," *IEEE Transactions on Big Data*, vol. 6 (3), pp. 427–429, Sep. 2020. DOI: 10.1109/TBDATA.2020.3015536.

- [8] C. Corbane, V. Syrris, F. Sabo, P. Politis, M. Melchiorri, M. Pesaresi, P. Soille, and P. Kemper, “Convolutional neural networks for global human settlements mapping from Sentinel-2 satellite imagery,” *Neural Computing and Applications*, 2020. DOI: 10.1007/s00521-020-05449-7.
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- [10] P. Kempeneers, O. Pesek, D. De Marchi, and P. Soille, “A python package for the analysis of geospatial data,” *International Journal of Geo-Information*, vol. 8 (10), 2019. DOI: 10.3390/ijgi8100461.
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- [12] C. Corbane, F. Sabo, V. Syrris, T. Kemper, P. Politis, M. Pesaresi, P. Soille, and K. Osé, “Application of the symbolic machine learning to Copernicus VHR imagery: The European settlement map,” *Geoscience and Remote Sensing Letters*, 2019. DOI: 10.1109/LGRS.2019.2942131.
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- [16] P. Soille, A. Burger, D. De Marchi, P. Kempeneers, D. Rodriguez, V. Syrris, and V. Vasilev, “A versatile data-intensive computing platform for information retrieval from big geospatial data,” *Future Generation Computer Systems*, vol. 81 (4), pp. 30–40, Apr. 2018. DOI: 10.1016/j.future.2017.11.007.

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- [23] M. Pesaresi, C. Corbane, A. Julea, A. Florczyk, V. Syrris, and P. Soille, “Assessment of the added-value of Sentinel-2 for detecting built-up areas,” *Remote Sensing*, vol. 8 (4), p. 299, 2016. DOI: 10.3390/rs8040299.
- [24] M. Pesaresi, D. Ehrlich, S. Ferri, A. Florczyk, S. Freire, F. Haag, M. Halkia, A. M. Julea, T. Kemper, and P. Soille, “Global human settlement analysis for disaster risk reduction,” *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, vol. XL-7/W3, pp. 837–843, 2015. DOI: 10.5194/isprsarchives-XL-7-W3-837-2015.
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### 3 Conference proceedings

- [1] M. Scavazzon, A. Burger, F. Eyraud, and P. Tognoli, “EOS at the Joint Research Centre,” in *EOS Workshop*, CERN, CERN, Feb. 2021. [Online]. Available: [https://indico.cern.ch/event/985953/contributions/4234476/attachments/2198741/3718102/2021\\_EOS\\_WS\\_JRC.pdf](https://indico.cern.ch/event/985953/contributions/4234476/attachments/2198741/3718102/2021_EOS_WS_JRC.pdf).
- [2] D. De Marchi, A. Burger, and P. Soille, “JupyterLab for earth observation applications with HTCondor scaling and Voilà dashboarding,” in *Cloud Storage Synchronization and Sharing (CS3 2021)*, CERN, Jan. 2021, p. 43. [Online]. Available: <https://indi.to/yFzwb>.
- [3] —, “From jupyter notebooks to web dashboards for big geospatial data analysis,” in *Book of abstracts of CS3 2020 - Workshop on Cloud Storage Synchronization and Sharing Services*, B. Chan, Ed., CERN, Jan. 2020, p. 43. DOI: 10.5281/zenodo.2545482. [Online]. Available: [https://indico.cern.ch/event/854707/contributions/3680468/attachments/1977586/3292165/JEODPP\\_CS3\\_Copenhagen\\_2020.pdf](https://indico.cern.ch/event/854707/contributions/3680468/attachments/1977586/3292165/JEODPP_CS3_Copenhagen_2020.pdf).
- [4] A. Burger, M. Scavazzon, P. Tognoli, and F. Eyraud, “EOS as storage back-end for jrc scientific data processing,” in *EOS Workshop*, CERN, Geneva, Switzerland: CERN, Feb. 2020. [Online]. Available: <https://indico.cern.ch/event/862873/contributions/3724441/>.
- [5] D. Rodriguez, L. Marletta, and P. Soille, “Dynamic batch service with HTCondor and Kubernetes,” in *Book of abstracts of HTCondor European Conference 2019*, JRC, Joint Research Centre, Ispra (Italy): CERN, 2019. [Online]. Available: <https://indi.to/9Xdcg>.
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- [7] L. Martinez-Sanchez, D. Rodriguez-Aseretto, P. Soille, and P. S. A. Beck, “Large-scale aerial photo processing for tree health monitoring with HTCondor,” in *Book of abstracts of HTCondor European Conference 2019*, JRC, Joint Research Centre, Ispra (Italy): CERN, 2019. [Online]. Available: <https://indi.to/5rzDR>.
- [8] C. Corbane and D. Rodriguez, “Large scale mapping of human settlements from earth observation data with JEO-batch of the JRC Earth Observation Data and Processing Platform,” in *Book of abstracts of HTCondor European Conference 2019*, JRC, Joint Research Centre, Ispra (Italy): CERN, 2019. [Online]. Available: <https://indi.to/Cwx4b>.
- [9] P. Kempeneers and S. P., “Full resolution global Sentinel-2 mosaics: An effective and efficient method based on quicklooks and cloud masks,” in *Living Planet Symposium*, 2019.

- [10] A. Verheggen, K. Janouskova, V. Syrriis, B. Combal, E. Hugh, and F. Achard, “Mapping African dry forests with Sentinel 1 and 2 time series: A case study over Tanzania,” in *Living Planet Symposium*, 2019.
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- [28] D. Rodriguez, V. Vasilev, and P. Soille, “Experiences with HTCondor universes on a petabyte scale platform for Earth Observation data processing,” in *Book of abstracts of HTCondor European Conference 2017*, DESY, Hamburg, Germany: CERN, 2017. [Online]. Available: <https://indico.cern.ch/event/611296/contributions/2604355/>.

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## 4 Conference presentations (oral or poster)

- [1] D. De Marchi and P. Soille, *Voilà dashboards for policy support*, Presentation at the Jupyter Con 2020, Oct. 2020. [Online]. Available: <https://cfp.jupytercon.com/2020/schedule/presentation/190/voila-dashboards-for-policy-support/>.
- [2] R. d’Andrimont, A. Verhegghen, M. M., G. Lemoine, P. Strobl, P. Kempeneers, and M. van der Velde, “A Sentinel-1 based European crop parcel map using 2018 in-situ LUCAS Copernicus observations,” in *EO4AGRI conference*, ESA, 2020.



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- [6] C. Corbane, P. Panagiotis, P. Kempeneers, M. Pesaresi, D. Rodriguez, V. Syrris, and P. Soille, *Automatic image data analytics from a global Sentinel-2 composite for the study of human settlements*, Presentation at the 2019 Big Data from Space conference (BiDS’19), Feb. 2019. [Online]. Available: <https://az659834.vo.msecnd.net/eventsairwesteuprod/production-nikal-public/da34c89c72a3409f8a7921b42217903b>.
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- [10] D. De Marchi and P. Soille, *Big geospatial data visualization and analysis in Jupyter*, Presentation at the EuroSciPy 2018 conference, Trento, Italy, Sep. 2018. [Online]. Available: <https://www.euroscipy.org/2018/descriptions/Big%20geospatial%20data%20visualization%20and%20analysis%20in%20Jupyter.html>.
- [11] P. Soille, *Big eo data at jrc: Activities, ideas, and vision*, Slides of presentation at 2017 EODC FORUM, 9–10 May, Vienna, Austria, 2017.
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