Giulia Sofia CV

Personal Information

Giulia Sofia
University of Connecticut
Civil and Environmental Engineering
Storrs, CT
Date of Birth: 28th February 1983

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www.geomorph.it

Dr Giulia Sofia is an experienced researcher with a broad field of knowledge in geomorphometry. After her master degree in 2008, she started her PhD-work right away. During the PhD, she gained expert knowledge in the processing and analysing of remote sensing data with different GIS software (open or commercial) and learned coding techniques in advance scientific platforms (Matlab/Phyton). She also served as teaching assistant and main instructor in numerous GIS classes, a coding class for PhD students, and technical classes for professionals and stakeholders outside the academic world. Since 2008, Dr Sofia has participated in international conferences, at which she presented her work 36 times, as talks (17 presentations, two invited) and as posters. She has written 15 first author publications, is the second author for 6 others, and a co-author for 13 more (Scopus H-Index 13). Overall, 17 articles were published without her PhD supervisor (10 as first name author). She is Associate Editor for the journal ESurf (Copernicus) and guest editor in two special issues (journals: ESurf, IJGI). Dr Sofia is actively involved in advising students on appropriate research topics and editing and evaluating their technical works, officially co-supervising bachelor and master degree theses and doctorate theses.

Education

01/10/2008 – 31/12/2011   **PhD**

Water Resources, Soil Conservation & Watershed Management. Department Land, Environment, Agriculture and Forestry – University of Padova (Italy)

    Supervisor: Prof. G. Dalla Fontana

Thesis: Digital Terrain Analysis for Hydrogeomorphic features recognition

06/03/2006 – 22/09/2008   **Master of Science**

M.Sc. Forestry and Environmental Science - University of Padova (Italy)

    Supervisors: Prof. S. Fattorelli and Dr P. Tarolli

Thesis: Analisi per il trattamento dell'informazione topografica nella modellazione idraulica mono-bidimensionale di aree inondabili. (*Analysis of handling of topographic information for mono-bidimensional flood modeling*)

01/09/2002 – 24/02/2006   **Bachelor of Science**

B.Sc. Forestry and Environmental Technology - University of Padova (Italy)

    Supervisors: Prof. M. Pettenella and Dr L. Secco

Thesis: Cambiamenti nelle attività agro-silvo-pastorali e relative variazioni nell'uso del suolo: un'analisi in Tentino (*Changes in agro-silvo-activities and consequent changes in landuse: an analysis for Trentino.*)

Appointments

2018-ongoing	**Assistant Research Professor**: Department Civil and Environmental Engineering, University of Connecticut
2012-2018	**Research associate**: Department TeSAF, University of Padova
	Main Tasks: Digital Terrain Analysis and feature recognition in mountains and floodplains. Analysis of the variation of the drainage network in agricultural landscapes.
2008-2011	**Ph.D. Candidate**: Department TeSAF, University of Padova
2008	**Visiting student**: Polytechnic institute of New York, New York, USA

Teaching Activity

2018	Instructor: Formazione all'avanguardia per la gestione del rischio idrogeologico: I sistemi informativi territoriali nell'analisi e nella prevenzione del dissesto idrogeologico (*Cutting-edge training for hydrogeological risk management: GIS for the analysis and prevention of hydrogeological risk*) (42 hrs) organized by *ANBI Veneto (italy)*
2017	Instructor: <u>Applicazione GIS per deflussi idrici</u> (*Gis applications for runoff analysis*) (1 ECTS) organised by the *Ordine Dottori Agronomi e Forestali di Brescia*, Brescia (Italy)
2015- 2018	Instructor: <u>Introduction to Interactive Programming in Python</u> (4 ECTS), PhD program LEHR, University of Padova
2015- 2018	Teaching assistant in <u>Gis applications in Agriculture</u> (4 ECTS). University of Padova
2014	Teaching assistant at <u>NCKU-UNIPD (Italy-Taiwan) Joint Summer School 2014</u>, University of Padova
2013-2016	Teaching assistant <u>Integrated Watershed Management</u> (6 ECTS), MEDfOR - Erasmus Mundus MSc in Mediterranean Forestry and Natural Resources Management, University of Padova
2013	Teaching assistant at <u>EGU Summer School 2013</u>, University of Padova
2012- 2016	Instructor: *ArcGIS 10.x base class* (1 ECTS) *(University of Padova).*
2011	Instructor: <u>Calcolo di parametri morfometrici ed estrazione di features idrogeomorfiche con Matlab</u> *in Geomorphometry: Analisi quantitativa della superficie terrestre (24 hr). Centro Interdipartimentale di ricerca di Geomatica (CIRGEO),* University of Padova
2011-2012	Teaching assistant in <u>Idrologia e Sistemazioni Idraulico-Forestali (Hydrology and watershed management)</u> (8 ECTS). University of Padova

External Positions, Leadership & Commission of Trust

Reviewer NSF (U.S. National Science Foundation) (2016); Review panel member: COST (European Cooperation in Science and Technology) actions, Earth System Science and Environmental Management (ESSEM) section (2014).

Editorial Positions

Associate Editor *Earth Surface Dynamics* (Copernicus). Associate editor in Special Issues: "Frontiers in Geomorphometry" [*Earth Surface Dynamics* (Copernicus)]; "Leading progress in Digital Terrain Analysis and Modeling" [*ISPRS International Journal of Geo-Information* (MDPI)]

Service Activity

Reviewer (journals): Advance in Water Resources; International Journal of Geographic Information Science; Natural Hazards and Earth System Sciences; Heliyon; International Journal of Environmental Research and Public Health; Entropy; Progress in Physical geography, Remote Sensing, Land degradation and development, Journal of Selected Topics in Applied Earth Observations and Remote Sensing; Earth surface processes and landform; Science of the Total Environment.

Publications

Peer-reviewed Journals (corresponding author* marked)

2019

1. **Sofia*, G**., Ragazzi, F., Giandon,P., Dalla Fontana, G., Tarolli, P., (2019). On the linkage between runoff generation, land drainage, soil properties, and temporal patterns of precipitation in agricultural floodplains, *Advances in Water Resources*, 124, 120-138, https://doi.org/10.1016/j.advwatres.2018.12.003.
2. Tarolli*, P., Cao, W., **Sofia, G.,** Evans, D., & Ellis, E. C. (2019). From features to fingerprints: A general diagnostic framework for anthropogenic geomorphology. *Progress in Physical Geography: Earth and Environment*, 43(1), 95–128. <u>https://doi.org/10.1177/0309133318825284</u>

2018

3. Pijl, A., Brauer, C., **Sofia, G.,** Teuling, A.J., Tarolli, P., (2018) Hydrologic impacts of changing land use and climate in the Veneto lowlands of Italy, *Anthropocene*, 22, 20-30, https://doi.org/10.1016/j.ancene.2018.04.001.

4. Lo Re, G., Fuller*, I., **Sofia, G**., Tarolli, P. (2018). High-resolution mapping of Manawatu palaeochannels. *New Zealand Geographer*, doi: 10.1111/nzg.12186

5. Xiang, J., Chen*, J., **Sofia, G**., Tian, Y., Tarolli, P., (*2018*), Open-pit Mine Geomorphic Changes Analysis Using Multi-temporal UAV survey, *Environmental Earth Sciences,* 77: 220, https://doi.org/10.1007/s12665-018-7383-9

6. Tarolli*, P., **Sofia, G.,** Wenfang CAO, (2018). The Geomorphology of the Human Age, In *Encyclopedia of the Anthropocene*, *Elsevier; 35–43.* doi: 10.1016/B978-0-12-809665-9.10501-4 (Invited Article)

2017

7. Roder*, G., **Sofia, G.,** Wu, Z., Tarolli, P., (2017) Assessment of social vulnerability to floods in the floodplain of northern Italy. *Weather, Climate and Society,* 9(4), 717-737

8. Tarolli*, P., **Sofia, G.,** Wenfang CAO, (2017). The Geomorphology of the Human Age, In *Reference Module in Earth Systems and Environmental Sciences*, https://doi.org/10.1016/B978-0-12-409548-9.10501-9. (Invited Article)

9. **Sofia*, G.,** Di Stefano, C., Ferro, V., Tarolli, P. (2017) Morphological Similarity of channels: from linear erosional features (Rill, Gully) to Alpine rivers. *Land Degradation & Development*, 28(5), 1717-1728.

10. **Sofia*, G.,** Masin, R., Tarolli, P. (2017) Prospects for crowdsourced information on the geomorphic 'engineering' by the invasive Coypu (Myocastor coypus). *Earth Surface Processes and Landform,* 42, 365–377.

11. **Sofia*, G.***, Roder, G., Dalla Fontana, G., Tarolli, P., (2017) Flood dynamics in urbanised landscapes: 100 years of climate and humans' interaction, *Scientific Reports*, 7.

12. **Sofia*, G.***, Tarolli, P., (2017). Hydrological Response to ~30 years of Agricultural Surface Water Management, *Land*, 6(1).

13. Tarolli*, P., **Sofia, G.,** Ellis, E. (2017), Mapping the topographic fingerprints of humanity across Earth*, Eos*, 98.

14. Prosdocimi*, M., Burguet, M., Di Prima, S., **Sofia, G.,** Cerdà, A., Esparzad E.T., Comino, J.R., Tarolli, P., (2017) Rainfall simulation and Structure-from-Motion photogrammetry for the analysis of soil water erosion in Mediterranean vineyards *Science of the Total Environment,* 574, 204-215.

2016

15. **Sofia*, G.,** Hillier, J. K., and Conway, S. J. (2016). Frontiers in Geomorphometry and Earth Surface Dynamics: Possibilities, Limitations and Perspectives, *Earth Surf. Dynam.,* 4, 721-725, 2016. (Review Article)

16. **Sofia*, G.,** Tarolli, P., (2016). Automatic detection of roads under forest cover: advances in the analysis of roads and geomorphic process interaction. *Rendiconti Online della Società Geologica Italiana*, 39, 23-26.

17. **Sofia*, G**., Bailly, J., Chehata, N., Tarolli, P., Levavesseur, F., (2016). Comparison of Pleiades and LiDAR Digital Elevation Models for terraces detection in farmlands. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing,* 9(4), 1567 - 1576.

18. Tarolli*, P., **Sofia, G.** (2016). Human topographic signatures and derived geomorphic processes across landscapes, *Geomorphology*, 255, 140–161. (Invited Review Article)

19. Mutzner*, R., Tarolli, P., **Sofia, G.,** Parlange, M.B., Rinaldo, A. (2016). Field study on drainage densities and rescaled width functions in a high-altitude alpine catchment. *Hydrological Processes*, 30: 2138–2152.

2015

20. Hillier*, J, **Sofia, G.,** Conway, S. (2015). Perspective – Synthetic DEMs: A vital underpinning for the quantitative future of landform analysis? *Earth Surface Dynamics*, 3, 587-598, 2015. (Review Article)

21. **Sofia*, G.,** Marinello, F., Tarolli, P. (2015). Metrics for quantifying anthropogenic impacts on geomorphology: road networks, *Earth Surface Processes and Landforms*, 41: 240–255.

22. **Sofia*, G.,** Tarolli, P., Carzorzi, F., Dalla Fontana, G., (2015). Downstream hydraulic geometry relationships: gathering reference reach-scale width values from LiDAR, *Geomorphology*, 250, 236-248.

23. Prosdocimi*, M., **Sofia, G.,** Dalla Fontana, G., Tarolli, P. (2015). Bank erosion in agricultural drainage networks: effectiveness of Structure-from-Motion photogrammetry for post-event analysis, *Earth Surface Processes and Landforms*, 40: 1891–1906.

24. Chen, J., Li, L., Chang, K*., Sofia, G*., Tarolli*, P., (2015). Open-pit mining geomorphic feature characterization. *International Journal of Applied Earth Observation and Geoinformation,* 42, 76-86.

25. Tarolli*, P., **Sofia, G.,** Calligaro, S., Prosdocimi, M., Preti, F., Dalla Fontana, G. (2015). Vineyards in terraced landscapes: new opportunities from lidar data, *Land Degradation & Development*, 26, 92–102.

2014

26. Li*, K., Chen, J., Tarolli, P., **Sofia, G.,** Feng, Z., Li, J. (2014). Geomorphometric multi-scale analysis for the automatic detection of linear structures on the lunar surface, *Earth Science Frontiers*, 21(6), 212-222.

27. **Sofia*, G.,** Marinello, F., Tarolli, P. (2014). A new landscape metric for the identification of terraced sites: the Slope Local Length of Auto-Correlation (SLLAC), *ISPRS Journal of Photogrammetry and Remote Sensing*, 96, 123-133.

28. **Sofia*, G.,** Prosdocimi, M., Dalla Fontana, G., Tarolli, P. (2014). Modification of artificial drainage networks during the past half-century: Evidence and effects in a reclamation area in the Veneto floodplain (Italy) *Anthropocene*, 6, 48-62.

29. **Sofia*, G**., Dalla Fontana, G., Tarolli, P. (2014). High-resolution topography and anthropogenic feature extraction: testing geomorphometric parameters in floodplains, *Hydrological Processes*, 28, 2046-2061.

2013

30. **Sofia, G.,** Pirotti, F., Tarolli*, P. (2013). Variations in multiscale curvature distribution and signatures of LiDAR DTMs errors*, Earth Surface Processes and Landforms*, 38(10), 1116–1134, ISSN: 1096-9837.

31. Calligaro*, S., **Sofia, G.,** Prosdocimi, M., Dalla Fontana, G., Tarolli, P. (2013). Terrestrial Laser Scanner data to support coastal erosion analysis: the Conero case study, *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XL-5/W3, 125-129.

32. Cazorzi*, F., Dalla Fontana, G., De Luca, A., **Sofia, G.,** Tarolli, P. (2013). Drainage network detection and assessment of network storage capacity in agrarian landscape. *Hydrological Processes*, 27(4).

2012

33. Tarolli*, P., **Sofia, G.,** Dalla Fontana, G. (2012). Geomorphic features extraction from high-resolution topography: landslide crowns and bank erosion, *Natural Hazards*, 61, 65-83.

2011

34. **Sofia*, G.,** Tarolli, P., Cazorzi, F., Dalla Fontana, G. (2011). An objective approach for feature extraction: distribution analysis and statistical descriptors for scale choice and channel network identification, *Hydrol. Earth Syst. Sci.*, 15, 1387-1402.

Proceedings

1. **Sofia, G.,** Tarolli, P., Cazorzi, F., De Luca, A., Dalla Fontana, G. (2012). Il reticolo di drenaggio minore: caratterizzazione a larga scala di densità di drenaggio e capacità di invaso. XXXIII Italian Conference of Hydraulics and Hydraulic Constructions, p. 160, Cosenza: EdiBios, ISBN: 978-88-97181-18-7.

2. **Sofia, G.,** Cazorzi, F., De Luca, A., Dalla Fontana, G., Tarolli, P. (2011). Drainage network detection and quantification of water storage capacity within drainage channels in alluvial plains through LiDAR derived DTMs. *Epitome*, 4, ISSN: 1972-1552, doi: 10.1474/Epitome.04.0925.Geoitalia2011.

3. Cazorzi, F., Dalla Fontana, G., De Luca, A**., Sofia, G**., Tarolli, P. (2011). Individuazione e caratterizzazione del reticolo idrografico minore in ambiente agrario. In: AA.VV.. Gestione e controllo dei sistemi agrari e forestali - Memorie. Belgirate, Associazione Italiana di Ingegneria Agraria, ISBN: 9788890627330.

Conference presentations

1. **Sofia, G** (2019) Combining geomorphometry, feature extraction techniques and earth-surface processes research: the way forward. *Arne Richter Award for Outstanding ECS Lecture* EGU2019-4357 [Wien]

2. **Sofia, G** (2019) On the linkage between humans, precipitation patterns, and floods. *GM Division Outstanding Early Carreer Scientist Lecture (Penck Lecture)* [Wien]

3. **Sofia, G.,** Nikolopoulos, E.I., Anagnostou, E.N., (2018) Channel geometry adjustment and flood response. EP11E-2098, AGU Fall meeting, 2018. [Washington D.C] (Poster)

4. **Sofia, G.,** Gazzin, A., Dalla Fontana, G., Tarolli, P. (2018) Human impacts on hydrological change: the relative role of soil type and irrigation networks. *Geophysical Research Abstracts*, 20, EGU2018-637 [Wien]

5. Cao, W., **Sofia, G.,** Ellis, E., Evans, D., Tarolli, P. (2018) Developing a framework to observe and analyze anthropogenic geomorphology across millennia. *Geophysical Research Abstracts*, 20, EGU2018-780 [Wien]

6. Pijl, A., Tosoni, M., Roder, G., **Sofia, G.,** Tarolli, P. (2018) Unmanned Aerial Vehicle (UAV) data for monitoring and maintenance of terraced landscapes – a case study in Lombardy vineyards (Italy) *Geophysical Research Abstracts*, 20, EGU2018-875 [Wien]

7. Cao, W., **Sofia, G.,** Ellis, E., Tarolli, P. (2018) Geomorphometric characterization of natural and anthropogenic land cover in different landscapes context. *Geophysical Research Abstracts*, 20, EGU2018-1043[Wien]

8. Pijl, A., Brauer, C., **Sofia, G.**, Teuling, R., Tarolli, P. (2017) Hydrological Assessment of Model Performance and Scenario Analyses of Land Use Change and Climate Change in lowlands of Veneto Region (Italy) *Geophysical Research Abstracts*, 19, EGU2017-1464-1 [Wien] *PICO*

9. **Sofia, G.**, Pizzulli, F., Tarolli, P., (2017) Humans reclaimed lands in NorthEastern Italy and artificial drainage networks: effects of ~30 years of Agricultural Surface Water Management, *Geophysical Research Abstracts*, 19, EGU2017-7942-3 [Wien] *PICO*

10. Roder, G, **Sofia, G.**, Wu, Z, Tarolli, P. (2017) Social vulnerability in the flood-prone anthropogenic landscape of Northern Italy, *Geophysical Research Abstracts*, 19, EGU2017-1262-1, eISSN: 1607-7962. [Wien] *PICO*

11. Xiang, J., Chen, J., **Sofia, G.**, Lai, Z., Huang, H., Tarolli, P., (2017) Monitoring of Open-pit mining using geomorphometry and Unmanned Aerial Vehicles (UAVs)*, Geophysical Research Abstracts*, 19, EGU2017-13593 [Wien] *PICO*

12. Tarolli, P., Fuller, I.C., Basso, F., Cavalli, M., **Sofia, G.**, (2017) Hydro-geomorphic connectivity and landslide features extraction to identifying potential threats and hazardous areas, *Geophysical Research Abstracts*, 19, EGU2017-17143-1 [Wien] *PICO*

13. **Sofia, G.**, Roder, G., Tarolli, P., (2016) Land-use, climate and floods dynamics in Northeastern Italy (Veneto). *Geophysical Research Abstracts*, 18, EGU2016-6520-1. [Wien] (Talk)

14. **Sofia, G.**, Tarolli, P., (2016) Smartphone imagery to analyze animal-induced erosion in riverbanks. *Geophysical Research Abstracts*, 18, EGU2016-12291-1. [Wien] (Talk)

15. Lo Re, G., Fuller, I.C., **Sofia, G.**, Holt, K., Macklin, M., Tarolli, P., (2016) High-resololution topography for the analysis of palaeochannels in the Manawatu river (New Zealand). *Geophysical Research Abstracts*, 18, EGU2016-14562. [Wien] *PICO*

16. Tarolli, P., **Sofia, G.**, (2016) Anthropogenic features and hillslope processes interaction. *Geophysical Research Abstracts*, 18, EGU2016-12102, eISSN: 1607-7962. [Wien] *PICO*

17. Chen, J., Li, K., **Sofia, G.**, Tarolli, P. (2015) Analysis of open-pit mines using high-resolution topography from UAV. *Geophysical Research Abstracts*, 17, EGU2015-4572. [Wien] *PICO*

18. **Sofia, G.**, Tarolli, P., (2015) Automatic detection of roads under forest cover. *X Convegno GIT – Società Geologica Italiana* [S. Leo ,RN] (Talk)

19. **Sofia, G.**, Tarolli, P., (2015) Geomorphology of anthropogenic landscapes. *Geophysical Research Abstracts*, 17, EGU2015-3372. [Wien] (Talk)

20. Prosdocimi, M., Calligaro, S.**, Sofia, G.**, Tarolli, P., (2015) Erosion processes by water in agricultural landscapes: a low-cost methodology for post-event analyses. *Geophysical Research Abstracts*, 17, EGU2015-948. [Wien] (Talk)

21. Hillier, J., **Sofia, G.**, Conway, S., (2015) Perspective- Synthetic DEMs: A vital underpinning for the quantitative future of landform analysis?. *Geophysical Research Abstracts*, 17, EGU2015-1593. [Wien] *PICO*

22. Tarolli, P., Prosdocimi, M., **Sofia, G.**, Dalla Fontana, G., (2015) Smartphones for post-event analysis: a low-cost and easily accessible approach for mapping natural hazards. *Geophysical Research Abstracts*, 17, EGU2015-12550. [Wien] *PICO*

23. Bailly, J., Sofia, G., Chehata, N., Tarolli, P., Levavesseur, F., (2015). Farmland terrace slope detection from Pleiades digital elevation models. *Geophysical Research Abstracts*, 17, EGU2015-10021 [Wien] (Poster)

24. Tarolli P., **Sofia, G.**, (2014). The topographic signature of anthropogenic geomorphic processes. Fall Meet. Suppl., EP43E-07. [San Francisco] (Talk)

25. **Sofia, G.**, Marinello, F., Tarolli, P. (2014). Exploring the spatial heterogeneity of terraced ladnscapes using LiDAR: the Slope Local Length of Auto-Correlation (SLLAC). *Geophysical Research Abstracts*, 16, EGU2014-5790. [Wien] (Talk)

26. **Sofia, G.**, Prosdocimi M., Dalla Fontana, G., Tarolli P. (2014). Recent Changes in Floodplain Urban Development and in Intense Rainfall Patterns: Evidence and Effects for the Reclamation Network in North-Eastern Italy. Fall Meet. Suppl., H51H-0713. [San Francisco] (Poster)

27. Prosdocimi M., **Sofia, G.**, Preti F., Dalla Fontana, G., Tarolli P. (2014). Relative Path Impact Index (RPII): a morphometric approach to quantify the effect of anthropogenic features on surface flow processes in agricultural landscapes. Fall Meet. Suppl., EP53A-35090. [San Francisco] (Poster)

28. Li, K., Chen, J., **Sofia, G.**, Tarolli, P. (2014) Geomorphometric multi-scale analysis for the recognition of Moon surface features using multi-resolution DTMs. *Geophysical Research Abstracts*, 16, EGU2014-6687 [Wien] *PICO*

29. Tarolli, P., **Sofia, G.**, Calligaro, S., Prosdocimi, M., Preti, F., Dalla Fontana, G. (2014). Erosion in vineyards and LiDAR: new opportunities for anthropogenic terraced landscapes. *Geophysical Research Abstracts*, 16, EGU2014-5939. [Wien] (Poster)

30. Prosdocimi, M., **Sofia, G.**, Dalla Fontana, G., Tarolli, P. (2013). Land use change in the Veneto floodplain and consequences on minor network drainage system. *AIIA 2013* (*X Conference of the Italian Society of Agricultural Engineering*). [Viterbo] (Talk)

31. Tarolli, P**., Sofia, G.,** Marinello, F. (2013). The topographic signature of man. *BSG2013 Annual Conference*, Royal Holloway, University of London. [London] (Talk)

32. **Sofia, G.,** Tarolli, P., Cazorzi, F., Dalla Fontana, G. (2013). Automatic measurement of bankfull widths from high resolution LiDAR DTMs: a new tool to analyze the link between hydraulic and morphological variables. *Geophysical Research Abstracts*, 15, EGU2013-5494. [Wien] (Talk)

33. Prosdocimi, M., **Sofia, G.,** Dalla Fontana, G., Tarolli, P. (2013). Land use change in the last century in the Veneto floodplain: effects on network drainage density, water storage, and related consequences on flood risk. *Geophysical Research Abstracts*, 15, EGU2013-4842. [Wien] (Talk)

34. Calligaro, S., **Sofia, G.**, Guarnieri, A., Tarolli, P. (2013). LIDAR data to support coastal erosion analysis: the Conero study case. *Geophysical Research Abstracts*, 15, EGU2013-5393. [Wien] *PICO*

35. **Sofia, G.,** Dalla Fontana, G., Tarolli, P. (2012). LiDAR and Geomorphic Parameters for Anthropogenic Feature Extraction in Floodplains. Abstract IWG04-D5-AM2-Leo3-003 (IWG04-A007), AOGS – AGU (WPGM) Joint Assembly 2012. [Singapore] (Talk)

36. Tarolli, P., **Sofia, G.,** Dalla Fontana, G. (2012). Opportunities and challenges from high resolution topography for understanding earth surface processes. *BSG2012 Annual Conference 2012*, University of Nottingham. [Nottingham] (Talk)

37. **Sofia, G.,** Tarolli, P., Cazorzi, F., De Luca, A., Dalla Fontana, G. (2012). Il reticolo di drenaggio minore: caratterizzazione a larga scala di densità di drenaggio e capacità di invaso. XXXIII Italian Conference of Hydraulics and Hydraulic Constructions. [Brescia] (Poster)

38. **Sofia, G.,** Tarolli, P., Dalla Fontana, G. (2012). LiDAR DTMs and anthropogenic feature extraction: testing the feasibility of geomorphometric parameters in floodplains". *Geophysical Research Abstracts*, 14, EGU2012-4114-2. [Wien] (Poster)

39. **Sofia, G.,** Cazorzi, F., De Luca, A., Dalla Fontana, G., Tarolli, P. (2011). Drainage network detection and quantification of water storage capacity within drainage channels in alluvial plains through LiDAR derived DTMs. *Geoitalia 2011* (VIII Italian Forum of Earth Sciences). [Torino] (Talk)

40. **Sofia, G.,** Tarolli, P., Cazorzi, F., Dalla Fontana, G. (2011). Channel network identification from high-resolution DTM: a statistical approach. *Geophysical Research Abstracts*, 13, EGU2011-2980. [Wien] (Talk)

41. Tarolli, P., **Sofia, G.,** Pirotti, F., Dalla Fontana, G. (2010). Semi-automatic methods for landslide features and channel network extraction in a complex mountainous terrain: new opportunities but also challenges from high resolution topography. *Geophysical Research Abstracts*, 12, EGU2010-15176. [Wien] (Talk)

42. Cazorzi, F., Tarolli, P., **Sofia, G.,** De Luca, A., Dalla Fontana, G. (2011). Surface water storage in alluvial and urbanized plains: the effectiveness of high-resolution topography. *Geophysical Research Abstracts*, 13, EGU2011-3804. [Wien] (Poster)

43. Tarolli, P., **Sofia, G.,** Dalla Fontana, G. (2009). Semi−automatic methodologies for landslide features extraction: new opportunities but also challenges from high resolution topography. Fall Meet. Suppl., NH41C-1263. [San Francisco]. (Poster)

Organisation of International conferences
2015-2019   Convener & Chairperson: "*Frontiers in Geomorphometry and Earth Surface Dynamics: Possibilities, Limitations and Perspectives*" (EGU General Assembly)

Prizes and Awards
2019: **Arne Richter Award for Outstanding Early Career Scientists**, European Geoscience Union
2018: **Land (MDPI) travel award**
2008: **H2CU (Honors Center of Italian University) grant:** Visiting Student at the Polytechnic institute of New York, New York, USA

Supervising and mentoring activities.
Co-advisor: PhD: Mariam Khanam (2019) Co-supervisor. M.Sc.: Gazzin, A. (2017); Tosonim M. (2017); Varisco, F., (2017); Breda, F. (2017); Basso, F., (2017); Lo Re, G. (2016); Prosdocimi, M., (2013) University of Padova; Pijl, A. (2016), Wageningen University.