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**FREWARE SOFTWARE
FOR EARTH SCIENCE AND
ENGINEERING SCIENTIFIC
COMMUNITY**
(developed by *Lorenzo Borselli*)

SSAP2010 (*Slope Stability Analysis Program*) (rel 4.9.8-2018) - Analysis of slope stability in natural and artificial complex conditions. Soil and rock masses.

KUERY - Global Erodibility Database Query (rel. 1.5) : based on Quantile Regression applied (Borselli et al. 2009) on global erodibility databases (Torri et al. al 1997) and climatic Koppen classification (Salvador Sanchis et al. , 2008) , Borselli et al. (2012)

DECOLOG 5.6.1
DECONVOLUTION OF MIXTURES' COMPONENTS INSIDE PARTICLE SIZE DISTRIBUTIONS

PESERA-L - (rel. 1.3) Sediment Yield due to shallow mass movement in a watershed. An addendum to the PESERA model.

VOLCANOFIT 2.0.1
Modeling a Stratovolcano Edifice with 3D surface

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Citations and H factor (public access links):

#SCOPUS: (H-factor 18 - last update 23/07/2018)
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#Research Gate ([RG score 32.28 - H factor 20](#) (excluding self citation) - last update 23/07/2018)
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Dr. Lorenzo Borselli , Ph.D.

Earth and Soil Scientist, Engineering Geologist. Specialist in soil and rocks mechanics and hydrology.

Degree in geology 1989 at the university of Florence Italy. In the 1998 received Ph.D In Soil science at the university of Florence, ITALY.

Since 1997 until 2011 worked as Researcher at National Research Council (CNR). Since 2003 worked as Researcher at the Research Institute for Geo-Hydrological Protection (CNR-IRPI). In the period 2009-2011, He has been head of research unit of CNR-IRPI, in Florence,Italy.

Referee of several International scientific journals:

Hydrological Processes, Catena, Earth Surface Processes and Landforms, Geomorphology, Journal of Environmental Management, Soil Use and Management, European Journal of Soil Science, Earth Science review, Journal of Hydrology.

Member of Editorial Board, as Associate Editor, of [Journal of Soil and Water Conservation](#). (march 2010 - July 2016).

Member of Editorial Board, as Associate Editor, of [Revista Mexicana de Ciencias Geologicas](#). (2013-2016)

(volcanoids)

EUROSEM 2010 (European soil Erosion Model - 2010). The European Soil Erosion Model (EUROSEM) is a dynamic distributed model, able to simulate sediment transport, erosion and deposition by rill and interrill processes in single storms for both individual fields and small catchments.

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LABORATORIO DE ANÁLISIS DE IMÁGENES Y MODELADO ANALÓGICO
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Has been Italian delegate COST ACTION 623 "Soil Erosion and Global change" and of COST 634 "On and Off-site Environmental Impact of Runoff and Erosion". funded by EU. He collaborated in several international research projects (funded by EU) related to Soil erosion process and modeling , soil conservation, desertification process and measures for mitigation (MWISED, TERON, RECONDES. DESIRE, LAMPRE etc.). Since 2002 collaborated with Mexican universities (UNAM,UASLP) to projects in assessment of hydrological components for volcanic hazard. Author or Co-author of 60 papers on international scientific journals, and book chapters. His current research interests are: software development and modeling for stability of slopes, soil and rock mechanics, shallow landslide modeling ,surface hydrology, statistical and mathematical advanced techniques applied to soil erosion and surface hydrology, modeling soil erosion by water, soil erosion by tillage and land leveling. Author of various software distributed freeware at scientific community: "Slope Stability Analysis Program (SSAP)" (www.ssap.eu), and DECOLOG (www.decolog.org), KUERY (www.lorenzo-borselli.eu/kuery). He is working, since July 2011, as Full-Time Tenured Professor of Geotechnics and Applied Geology at : Instituto de Geología / Facultad de Ingeniería, Universidad Autónoma de San Luis Potosí (UASLP) , San Luis Potosí, S.L.P. - MEXICO

Curriculum Vitae et Studiorum

- (1989) **Degree in Geology**, University of Florence. *Dissertation in experimental geomorphology: "Experimental study on rill erosion evolution".*
- (1989) Received the **Qualification for professional practice in Engineering Geology**, Florence September 1989, University of Florence.
- (1990) **"CONNAUGHT" fellowship**, Dept. of Geography, University of Toronto, Canada.
- (1991-1992) - **Research Fellowship** at the National Research Council - Centro per lo Studio della Genesi, *Classificazione e Cartografia del Suolo (CNR- CSGCCS)*, in Florence Italy - *experimental activity in the field of soil conservation and soil hydrology modelling, rainfall simulations.*
- (1992-1994) - **Research Fellowship** at the Agronomic Institute for Overseas (IAO), Florence Italy - *soil Physics and hydrological process modeling, rainfall simulations. In the same period participated, as expert in rainfall simulations and surface hydrology, at two of the experimental field work activities of the international research project STD2-285-I "IMPROVING PRODUCTIVITY OF CRUSTING SOILS AND DEPLETED SANDY SOIL IN ZIMBABWE"*, founded by UE, Coordinator Prof. Giovanni A. Ferrari of the Univ. of Florence.
- (1994-1997) - **PhD Student** at the Dept. of Soil Science, University of Florence, directed by Prof. Guido Sanesi, and dr. Dino Torri of the Institute for Soil Genesis and Ecology (CNR-IGES) in Florence. Theme: *Surface hydrology and modelling of soil roughness evolution and influences in water infiltration and runoff production, rainfall simulation.*

- *(May 1996 to July 96)*, worked at the “Laboratory for experimental Geomorphology“ Catholic University of Leuven (belgium), directed by Prof. Jean Poesen, using rainfall simulators for surface Hydrology modelling and studies of soil roughness evolution and influences in water infiltration and runoff production.
- *(1998)* - received a **PhD in soil Science** from the University of Florence with the dissertation "**Dinamica della rugosità superficiale del suolo e sua influenza nei processi di infiltrazione: analisi sperimentale e modellizzazione** " (Soil surface roughness dynamics an its influence on the infiltration processes: experimental analysis and modeling) (in italian)
- *(1998-2001)*, **contract researcher** at the Institute for Soil Genesis and Ecology of the NATIONAL RESEARCH COUNCIL (CNR-IGES), in Florence, directed by the Professor Gabriele Ristori.
- *(august 2001-september 2003)*, **Permanent position as Researcher at NATIONAL RESEARCH COUNCIL (CNR) in the Institute for Soil Genesis and Ecology (CNR-IGES) of Florence.**
- *(since september 2003)*, **Researcher at the CNR-IRPI - Research Institute for Geo-Hydrogeological Protection of the NATIONAL RESEARCH COUNCIL (CNR), in Florence.**
- *(october 2009-june 2011)*. **Deputy Director of Florence Branch of CNR-IRPI - Research Institute for Geo-Hydrogeological Protection, of the NATIONAL RESEARCH COUNCIL (CNR).**
(<http://WWW.IRPI.CNR.IT>)
- *(since July 2011)* . **Full Professor of Geotechnics and Applied Geology at:** Institute of Geology/Faculty of Engineering, Universidad Autonoma de San Luis Potosi (UASLP) , San Luis Potosí, S.L.P. - MEXICO
- *(since september 2011)*. **Academic Member titular of Doctorate School for Engnnering and Science or Materials (DICIM)** Universidad Autonoma de San Luis Potosi (UASLP) ,San Luis Potosí, S.L.P. - MEXICO
- *(since september 2011)*. **Academic Member titular of Pograduate School in Applied Geology.** Universidad Autonoma de San Luis Potosi (UASLP) ,San Luis Potosí, S.L.P. - MEXICO
- *(since 29 nov. 2012)* Membership to National Resarch System (Mexico) (**Sistema Nacional de Investigacion with level 2 (SNI II)**)
- *(November 2013-january2018)* **Head of Academic Group On Geomaterials and Geosystems modeling**, Faculty of Engineering, Universidad Autonoma de San Luis Potosi (UASLP) , San Luis Potosí, S.L.P. - MEXICO
- *(since July 2014)* . **Full-time Tenured Professor of Geotechnics and Engineering Geology at:** Institute of Geology/Faculty of Engineering, Universidad Autonoma de San Luis Potosi (UASLP) , San Luis Potosí, S.L.P. - MEXICO
- *(since January 2018-December 2018)* . **Visiting Professor of Geotechnics and Engineering Geology at: Department of Earth Science(DST), University of Florence, ITALY**

Participation in Scientific Research Programs:

- (1990-1993), STD2-285-I, "IMPROVING PRODUCTIVITY OF CRUSTING SOILS AND DEPLETED SANDY SOIL IN ZIMBABWE". Funded by EU;
- (1996-2000), FAIR3-CT96-1478, "Tillage Erosion : Current State, Future Trends and Prevention (TERON) ". Funded by EU.
- (1997-2000), ENV4-CT96-0359, "Inventory of alpine-relevant parameters for an alpine monitoring system using remote sensing data (ALPMON) ". Participation as consultant of the Italian Contractor of the Project. Funded by EU;
- (1998-2001), ENV4-CT97-0687, "Modelling Within Storm Erosion Dynamics (MWISED) ". Funded by EU;
- (1998-2003), COST Action 623, "Soil Erosion and Global Change". Funded by European Commission ;
- (2004-2007) COST Action 634: "On- and Off-site Environmental Impacts of Runoff and Erosion". Funded by European Commission ;
- (2004-2007) "Conditions for Restoration and Mitigation of Desertified Areas Using Vegetation" ([RECONDES](#)); European Commission GOCE-CT-2003-505361
- (2007-2012) "Desertification Mitigation and Remediation of Land - a global approach for local solutions " ([DESIRE](#)). European Integrated Project GOCE 0370462. à
- (October 2008 - June 2011) Italian study site coordinator and Scientific Responsible of CNR research group within [DESIRE](#) project.
- (2010-2013) FIRESENSE (Fire Detection and Management through a Multi-Sensor Network for the Protection of Cultural Heritage Areas from the Risk of Fire and Extreme Weather Conditions, FP7-ENV-2009-1-244088-FIRESENSE . <http://www.firesense.eu>.
- (18 september 2013 -2015) Associate Scientist to "LAMPRE project - Landslide Modelling and tools for vulnerability assessment Preparedness and REcovery management." ([LAMPRE](#) project) - European Union seventh framework program. Grant No. 312384.
- (2013-2017) Modelling of Hydrologic Prepossesses, Hydrophobicity and infiltration Dynamic for Flooding and Lahars hazard assessment . CONACYT Grant: Proyecto Ciencia Basica CB-2012/184060.
- (2018-) Software Innovation for the study of Geomaterials, Earth Science and Civil Engineering. CONACYT Grant: Proyecto Ciencia Basica CB-2016/286764.

Main Research Interests and Skills

- Slope stability computation advanced algorithms and search engines for critical slip surfaces.
- Soil and Rocks Mechanics.
- Geomaterials an Geosystems modelling for geo-hazard assessment.
- Global optimization algorithms and their application in earth sciences, hydrology and soil/rock Mechanics.
- Soil Erosion and soil Hydrology modelling.
- Soil conservation technologies.
- Slope stabilization strategies and technologies.
- Fuzzy mathematical techniques applied to manage parametric uncertainty in erosion and hydrology modeling, slope stability and slope failure processes.
- Soil erosion By Tillage: modeling and advanced measurement techniques.

Specialized Techniques (algorithms and software coding)

- Slope stability software, design and development.
- Deconvolution of mixtures of statistical distributions.
- Differential evolution (DE) algorithms for global optimization and earth science and engineering.
- Soil hydraulic parameters by inversion algorithms from rainfall simulations data and field/lab infiltrimeters.

- Soil surface roughness statistical properties and analysis with segmentation algorithms.
- Modelling uncertainty distributions using fuzzy variables.
- Monte Carlo numerical techniques and simulations .

CURRENT DIDACTIC ACTIVITIES:

- **UNDERGRADUATE COURSE OF GEOTECHNICS (at UASLP since 2011) ([INFO](#)) (in spanish)**
- **POSTGRADUATE COURSE : SLOPE INSTABILITY PROCESSES (at UASLP since 2011)**
- **SSAP SOFTWARE AND SLOPE STABILITY COURSES IN ITALY (since 2010) ([INFO](#)) (in italian)**

Earth science and Engineering Freeware Software, algorithms and coding (go to links forward..)

- Slope stability software - [SSAP2010](#) (*Slope Stability Analysis Program*) (rel 4.9.8-2018) - analysis of slope stability in natural and artificial complex conditions. (see also BORSELLI L. 2013. *Advanced 2D Slope stability Analysis by LEM by SSAP software: a full freeware tool for teaching and scientific community*. IN "ICL Landslide Teaching Tools". Kyoji Sassa, Bin He, Mauri McSaveney, Osamu Nagai (EDS.). International Consortium on Landslides (ICL). PP. 428. ISBN: 978-4-9903382-2-0)
- [KUERY](#) - Global Erodibility Database Query (rel. 1.5) : based on Quantile Regression applied (Borselli et al. 2009) on global erodibility databases (Torri et al. al 1997) and climatic Koppen classification (Salvador Sanchis et al. , 2008) , and Borselli et al. 2012., *A robust algorithm for estimating soil erodibility in different climates*. CATENA 97:85-94 DOI: 10.1016/j.catena.2012.05.012
- [PESERA-L](#) - (rel. 1.3). Sediment Yield due to shallow mass movements in a watershed. An addendum to the PESERA model.
- [DECOLOG 5.6.1](#) - *DECONVOLUTION OF MIXTURES' COMPONENTS INSIDE PARTICLE SIZE DISTRIBUTIONS*
- [EUROSEM 2010](#) (European soil Erosion Model - 2010). The European Soil Erosion Model (EUROSEM) is a dynamic distributed model, able to simulate sediment transport, erosion and deposition by rill and interill processes in single storms for both individual fields and small catchments.
- [VOLCANOFIT 2.0.1](#) Modeling a Stratovolcano Edifice with 3D surface (volcanoid). (see: BORSELLI L., CAPRA L., SAROCCHI D., De La CRUZ-REYNA S. 2011. *Flank collapse scenarios at Volcán de Colima, Mexico: a relative instability analysis*. *Journal of Volcanology and Geothermal Research*. 208:51–65. DOI: 10.1016/j.jvolgeores.2011.08.004)

List of Publications

(last updated 25 august 2018)

Papers on ISI - JRC Journals (International Peer Reviewed)

- CHAVEZ, G. M., RIVERA, F. C., SAROCCHI, D., BORSELLI, L., & RODRIGUEZ-SEDANO, L. A. (2018). FabricS: A user-friendly, complete and robust software for particle shape-fabric analysis.

Computers & Geosciences, 115, 20-30.

<https://doi.org/10.1016/j.cageo.2018.02.005>

- CAPRA, L., COVIELLO, V., BORSELLI, L., MARQUEZ-RAMIREZ, V.-H., and ARAMBULA-MENDOZA, R.(2018). Hydrological control of large hurricane-induced lahars: evidence from rainfall-runoff modeling, seismic and video monitoring, Nat. Hazards Earth Syst. Sci., 18, 781-794. <https://doi.org/10.5194/nhess-18-781-2018>
- PEREZ-GONZALEZ, M.L., CAPRA PEDOL, L., DAVILA-HERNANDEZ, N., BORSELLI, L., SOLIS-VALDEZ, S., ORTIZ-RORDIRGUEZ, A.J., (2017), Spatio-temporal land-use changes in the Colima-Villa de Álvarez metropolitan area, and their relationship to floodings: Revista Mexicana de Ciencias Geológicas . v. 34, núm. 2, 2017, p. 78-90. <http://dx.doi.org/10.22201/cgeo.20072902e.2017.2.435>
- ORTIZ-RODRIGUEZ A.J. , BORSELLI L. , SAROCCHI D.. 2017. Flow connectivity in active volcanic areas: Use of index of connectivity in the assessment of lateral flow contribution to main streams. Catena. 157:90-111. <http://dx.doi.org/10.1016/j.catena.2017.05.009>
- RODRIGUES-SEDANO, L. A., SAROCCHI, D., SULPIZIO, R., BORSELLI, L., CAMPOS, G., & CHAVEZ, G. M. 2016. Influence of particle density on flow behavior and deposit architecture of concentrated pyroclastic density currents over a break in slope: Insights from laboratory experiments. Journal of Volcanology and Geothermal Research, 328, 178-186. <http://dx.doi.org/10.1016/j.jvolgeores.2016.10.017>
- VIGIAK O., BEVERLY C., ROBERTS A. , THAYALAKUMARAN T., DICKSON M., McINNES J., BORSELLI L. 2016. Detecting changes in sediment sources in drought periods: The Latrobe River case study. Environmental Modelling & Software. Vol. 85:42-55. <http://dx.doi.org/10.1016/j.envsoft.2016.08.011>
- CHAVEZ, G. M., SAROCCHI, D., SANTANA, E. A., & BORSELLI, L. 2015. Optical granulometric analysis of sedimentary deposits by color segmentation-based software: OPTGRAN-CS. Computers & Geosciences, 85, 248-257. <http://dx.doi.org/10.1016/j.cageo.2015.09.007>
- CABALLERO, L., D. SAROCCHI, E. SOTO, and L. BORSELLI .2014, Rheological changes induced by clast fragmentation in debris flows, Journal of Geophysical Research , Earth Surf., 119(9): 1800–1817, <http://dx.doi.org/10.1002/2013JF002942>
- BRUNETTI M.T., GUZZETTI F., CARDINALI M., FIORUCCI F. , SANTANGELO M., MANCINELLI P., KOMATSU G. , BORSELLI L. 2014. Analysis of a new geomorphological inventory of landslides in Valles Marineris, Mars, Earth and Planetary Science Letters, Vol. 405: 156-168, ISSN 0012-821X, <http://dx.doi.org/10.1016/j.epsl.2014.08.025>. (<http://www.sciencedirect.com/science/article/pii/S0012821X14005317>)
- MORENO CHÁVEZ G., SAROCCHI D., ARCESANTANA E., BORSELLI L., RODRÍGUEZ-SEDANO L.A. 2014. Using Kinect to analyze pebble to block-sized clasts in sedimentology. Computers & Geosciences. Vol. 72:18–32. <http://dx.doi.org/10.1016/j.cageo.2014.07.008>
- SANTI E., TARANTINO C. , AMICI V., BACARO G. BLONDA P. , BORSELLI L. , ROSSI M. , TOZZI S. , TORRI D. 2014, Fine-Scale Spatial Distribution Of Biomass Using Satellite Images. Journal of Ecology and the Natural Environment, Vol.62, Pag.75-86, DOI: 10.5897/JENE2013.0416.
- MONTENEGRO RIOS A., SAROCCHI D., NAHAMAD-MOLINARI Y., BORSELLI L. 2013. Form From Projected Shadow (FFPS): An algorithm for 3D shape analysis of sedimentary particles. Computers & Geosciences. 60:98–108. DOI:10.1016/j.cageo.2013.07.008.
- TORRI D., SANTI E., MARGNANI M. , ROSSI M., BORSELLI L. , MACCHERINI S. 2013. The recurring cycles of biancana badlands: Erosion, vegetation and human impact. CATENA. 106:22-30. DOI:10.1016/j.catena.2012.07.001.
- BORSELLI I. , TORRI D. , POESEN J., IAQUINTA P. 2012. A robust algorithm for estimating soil erodibility in different climates. CATENA 97:85-94 DOI: 10.1016/j.catena.2012.05.012
- CABALLERO I. , SAROCCHI D., BORSELLI I. , CARDENAS a.l., 2012. Particle interaction inside debris flow: evidence through experimental data and quantitative clast shape analysis. Journal of Volcanology and Geothermal Research. 231-232:12-23. DOI: 10.1016/j.jvolgeores.2012.04.007

- TORRI D., POESEN J., BORSELLI L., BRYAN R., ROSSI M. . 2012. Spatial variation of bed roughness in eroding rills and gullies. *CATENA*.90:76–86. doi:10.1016/j.catena.2011.10.004
- CIAMPALINI R., BILLI P., FERRARI G., BORSELLI L., FOLLAIN S. 2012. Soil erosion induced by land use changes as determined by plough marks and field evidence in the Aksum area (Ethiopia). *Agriculture, Ecosystems and Environment* 146:197– 208. doi:10.1016/j.agee.2011.11.006
- VIGIAK O., BORSELLI L., NEWHAM L.T.H. , McINNES J. , ROBERTS A.M. 2012. Comparison of conceptual landscape metrics to define hillslope-scale sediment delivery ratio. *Geomorphology*. 138: 74–88. DOI:10.1016/j.geomorph.2011.08.026
- BORSELLI L., CAPRA L., SAROCCHI D., De La CRUZ-REYNA S. 2011. Flank collapse scenarios at Volcán de Colima, Mexico: a relative instability analysis. *Journal of Volcanology and Geothermal Research*. 208:51–65. DOI: 10.1016/j.jvolgeores.2011.08.004
- SMETS T., BORSELLI L., POESEN J., TORRI D.. 2011 Evaluation of the EUROSEM model for predicting the effects of erosion-control blankets on runoff and interrill soil erosion by water. *Geotextiles and Geomembranes* 29: 285-297. doi:10.1016/j.geotextmem.2011.01.012
- BORSELLI L., TORRI D. 2010. Soil roughness, slope and surface storage relationship for impervious areas. *Journal of Hydrology*. 393:389–400.doi:10.1016/j.jhydrol.2010.09.002
- NORINI G. , L. CAPRA, L. BORSELLI, F. R. ZUNIGA, L. SOLARI AND D. SAROCCHI. 2010. Large scale landslides triggered by Quaternary tectonics in the Acambay graben, Mexico. *Earth Surface Processes and Landforms*. 35:1445-1455. doi: 10.1002/esp.1987
- CAPRA, L., BORSELLI, L., VARLEY, N., GAVILANES-RUIZ, J.C, NORINI, G., SAROCCHI, D., CABALLERO, L., CORTES, A. . (2010). Rainfall-triggered lahars at Volcán de Colima, Mexico: Surface hydro-repellency as initiation process *Journal of Volcanology and Geothermal Research* . Volume 189(1-2):105-117 doi:10.1016/j.jvolgeores.2009.10.014
- SALVADOR SANCHIS M. P. , TORRI D. , BORSELLI L. , BRYAN R. , POESEN J. ,3 YAÑEZ M. S. CREMER C. (2009). Estimating parameters of the channel width–flow discharge relation using rill and gully channel junction data. *Earth Surf. Process. Landforms*, Vol. 34, 2023–2030 .DOI: 10.1002/esp.1887
- BORSELLI L., P. CASSI, D. TORRI. 2008. Prolegomena to Sediment and flows connectivity in the landscape: a GIS and field numerical assessment. *CATENA* (Elsevier):75(3): 268-277. doi:10.1016/j.catena.2008.07.006
- DESCHEEMAER K. J. POESEN, L. BORSELLI, J. NYSSSEN, D. RAES, M. HAILE, B. MUYS, J. DECKERS. (2008) . Runoff curve numbers for steep hillslopes with natural vegetation in semi-arid tropical highlands, northern Ethiopia. *Hydrological processes* . 22(20): 4097-4105 DOI: 10.1002/hyp.7011..
- CIAMPALINI R., P. BILLI, G. FERRARI and L. BORSELLI. 2008 Plough marks as a tool to assess soil erosion rates: A case study in Axum (Ethiopia). *CATENA*, 75 (1), p.18-27
- SALVADOR SANCHIS M.P. , TORRI D., BORSELLI L., AND POESEN J., 2008. Climate Effects on Soil Erodibility. *Earth Surface Processes and Landforms*, Volume 33(7), p.1082 - 1097
- BORSELLI L.,TORRI D. (2007) .A model for reducing soil erosion by tillage. *Journal of soil and water Conservation*.vol. 62(6): 158A
- TORRI D., POESEN J., BORSELLI L., KNAPEN A., 2006. Channel width – flow discharge relationships for rills and gullies. *Geomorphology*, 76, 273-279.
- CABALLERO L., MACIAS J.L., GARCIA-PALOMO A., SAUCEDEO G.R., BORSELLI L. , SAROCCHI D., SANCHEZ J.M. 2006. The september 8-9, 1998 rain triggered flood events at Motozintla, Chiapas, Mexico. *Natural Hazards*.39(1):103-126..
- DE ALBA S., L. BORSELLI, D. TORRI , S. PELLEGRINI, P. BAZZOFFI(2006). “ASSESSMENT OF TILLAGE EROSION IN TUSCANY (ITALY).” , *Soil & Tillage Research* 85 123–142.
- SAROCCHI,L. BORSELLI, J.L. MACIAS. (2005), Construction de perfiles granulometricos de depositos piroclasticos por metodos opticos. *Revista Mexicana de Ciencias Geologicas*.22:371-382
- CAPRA L. , J. LUGO-HUBP , L. BORSELLI. (2003). “Mass Movements In Tropical Volcanic Terrains: The Case Of Teziutlán (México)”. *Engineering Geology*, vol. 69 (3-4):359-379

- TORRI L., L. BORSELLI (2003). Equation For High Rate Gully Erosion , *CATENA*, 50:449-467.
- TORRI D. , L. BORSELLI (2002) “Clod Movement And Tillage Tool Characteristics For Modelling Tillage Erosion”. *Journal of Water and Soil Conservation*.57(1):24-28
- BORSELLI L. , D. TORRI, J. POESEN, P. SALVADOR SANCHIS (2001). Effect Of Water Quality On Infiltration, Runoff And Interrill Erosion Processes During Simulated Rainfall. *Earth Surface Processes And Landforms* 26:339-342
- BORSELLI L., D. TORRI. (2001) “Measurements Of Soil Traslocation By Tillage Using A Non Invasive Electromagnetic Method”. *Journal of Water and Soil Conservation* 56(2):106-111
- SALLES C., POESEN J., BORELLI L., (1999). Measurement Of Simulated Drop Size Distribution With An Optical Spectro Pluviometer: Sample Size Consideration". *Earth Surface Processes And Landforms*. 24:545-556.
- BORSELLI L. : (1999) Segmentation Of Soil Roughness Profiles. *Earth Surface Processes And Landforms*. 24:71-90.
- TORRI D.; J. POESEN & L. BORSELLI. (1997). Predictability And Uncertainty Of The Soil Erodibility Factor Using A Global Dataset. *CATENA* (Elsevier), 31:1-22
- KOVALIK P., M. BORGHETTI, L. BORSELLI, F. MAGNANI, G. SANESI, R. TOGNETTI (1997). Diurnal water relations of beech(*fagus silvatica* l.) Trees in the mountains of italy. *Agricultural and Forest meteorology*. 84:11-23.
- BORSELLI L., R. BIANCALANI, S. CARNICELLI , C. GIORDANI , G.A. FERRARI (1996). Effect Of Gypsum On Seedling Emergence In A Kaolinitic Crusting Soil. *Soil Technology* Vol. 9 , pp 71-81.
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GENERAL (Conference presentation and Invited Seminars)

- [Connectivity approach for flow and sediment delivery and application to SDR assessment\(2009\)](#)
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- [PESERA-L, the shallow landslides contribution to specific sediment yield \(SSY\), as extensions of the PESERA soil erosion model \(2010\)](#)
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- [Modelado De Geomateriales y Geosistemas para la evaluacion de peligros Geologicos - San Luis Potosi 9 septiembre 2016 \(in spanish\)](#)
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- [Extreme Gulling in Mexico in semi-abandoned agricultural lands and in active volcanic areas - field studies and modelling -2018.](#) Workshop - Gully erosion inventory and proposal for a modelling activity -Joint Research Centre, Ispra, Italy, 19 – 20 March 2018

DECOLOG SOFTWARE (www.decolog.org)

- [Deconvoluzione di misture con componenti log-normali entro distribuzioni granulometriche](#) (Napoli, IT, Univ. Federico II. (22 february 2011) (in italian).
- [Deconvolution fo Mixture's components inside Particle Size Distribution \(DICIM-UASLP, Mexico\).\(18-may-2016\).](#)

SSAP SOFTWARE (Slope stability software) (www.ssap.eu)

- [SSAP2010-Slope Stability Analysis Program - Invited seminar CNR-IRPI,Perugia, ITALY, \(28 January 2013\) \(in italian\)](#)
- [Evaluación de la estabilidad de taludes complejos en suelo y roca por medio de software SSAP 2010: aplicaciones en Italia y -México](#) (Invited seminar, 21 March 2013, Mexico ;DF, Sociedad Geologica Mexicana)(in spanish)
- [Advanced 2D Slope Stability Analysis by LEM with SSAP software.](#) (PDF tool appendix to.... *BORSELLI L. 2013. Advanced 2D Slope stability Analysis by LEM by SSAP software: a full freeware tool for teaching and scientific community. IN "ICL Landslide Teaching Tools". Kyoji Sassa, Bin He, Mauri McSaveney, Osamu Nagai (EDS.). International Consortium on Landslides (ICL). PP. 428. ISBN: 978-4-9903382-2-0*) (in english)
- [SSAP2010-Slope Stability Analysis Program - Invited seminar, Politecnico di Bari ITALY,\(21 January 2014\) \(in italian\)](#)
- [Modelado de estabilidad de taludes en el sistema solar:desde Marte, Luna y Ceres hasta Volcanes y microtaludes.](#) - Invited seminar Centro de Geociencias UNAM, Juriquilla Queretaro, 13 april 2016 , (in spanish)
- [Evaluación de la estabilidad de taludes complejos en suelo y roca por medio de software SSAP2010 aplicaciones en Italia y México.](#) - Invited seminar at Universidad Autonoma de Nuevo Leon (UANL), Linares, 10-10-2016 (in spanish)
- [Slope Stability Analysis Program - Programma di calcolo per l'analisi della stabilità dei pendii - SSAP2010.](#) Invited Seminar. UNESCO Chair on the Prevention and Sustainable Management of Geo-Hydrological Hazards, University of Florence, Italy. 10-11-2016 (in italian) <http://dx.doi.org/10.13140/RG.2.2.17292.31362>
- [La stabilità dei versanti secondo le NTC 2018:cenni teorici e algoritmi di applicazione con SSAP.](#)
IL RUOLO DELLA GEOINGEGNERIA NELLE NTC 2018 E NEGLI EUROCODICI: OPPORTUNITÀ DA COGLIERE . Politecnico di Milano 29 maggio 2018 (in italian)

DIDACTIC MATERIALS (presentations, in short courses ,organized from public istitutions)

- [Geotecnica - Corso Base](#) . Ordine dei Geologi della Puglia e Collegio degli Ingegneri Provincia di Bari. 8-9- giugno 2018, In collaborazioen con Ing. Lucia Greco (in Italian) (10 hours)
- [Geotecnica - Fondazioni Superficiali e Profonde](#) . Ordine dei Geologi della Puglia e Collegio degli Ingegneri Provincia di Bari. 20- giugno 2018, In collaborazioen con Ing. Lucia Greco (in Italian) (8hours)
- [Geotecnica - Stabilità' dei Pendii e Opere di Stabilizzazione](#) . Ordine dei Geologi della Puglia e Collegio degli Ingegneri Provincia di Bari. 27-28- giugno 2018, In collaborazioen con Ing. Lucia Greco (in Italian) (10 hours)

DISSEMINATION

- [Attività' della ricerca italiana in scienze della terra nella UASLP \(2016\).\(in italian\)](#)

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