

CURRICULUM VITAE



Silvio SENO

Full Professor of Structural Geology at the University of Pavia, Italy

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PERSONAL DATA AND EDUCATION

Born on February 26, 1957 in Torino, Italy

1985-86 Post-doc fellowship. Swiss Federal Institute of Technology Zurich (ETH Zurich).

1982 Certificate in Active tectonics. Université Paris Sud, Prof. Jacques Mercier.

1981 University of Pavia (Italy), School of Earth Sciences. Doctor of Geology.

EMPLOYMENT and RESPONSIBILITIES

2006-: Full Professor of Structural Geology at the University of Pavia, Italy

2002- Head of the Institute of Earth Sciences at the University of Applied Sciences of Southern Switzerland (SUPSI) (web: <http://www.ist.supsi.ch>), Lugano. The institute carries out applied research, education (basic and continuous) and service responsibilities. It also has activities in the areas of geological mapping, engineering geology and geotechnics, hydrogeology, hydrology and geomatics.

2000-2006: Associate Professor of Structural Geology at the University of Pavia.

2012- Member of the Seismic Risk Sector of the Italian High Risk Commission

2005- Responsible for the Civil Engineering Bachelor at the University of Applied Sciences of Southern Switzerland (SUPSI).

2000- Responsible for the 3D Modelling Laboratory of the Department of Earth Sciences, University of Pavia.

2009-2012 President of the PhD School in Earth Sciences at University of Pavia

2002 - 2005 President of the Work Group 'Soil protection' of the Alpe Adria Work Community.

2009 al 2012 Member of the Board of Directors of DRM Inc. (Disaster Risk Management, Blacksburg, Virginia, USA, <http://www.drmonline.net/>), an initiative of the Board of the Swiss Federal Institutes of Technology and Virginia Polytechnic Institute and State University.

RESEARCH INTERESTS

For more than thirty years has carried out research activities focused on the following main fields.

Structural geology

Finite strain in rocks applied to the understanding of deformation mechanisms during orogenic processes. thermochronometric analysis and dating brittle or brittle-ductile faults; active tectonics; laboratory analogue modelling of compressive and extensional structures, tectonic inversion processes; relationships between magmatism, sedimentation and tectonics in the Maritime Alps during the Late Paleozoic; recent geo-dynamic evolution of the Maritime Alps chain, its relationship with the Northern Apennine.

Natural hazards

Responsible for several projects on natural hazard mitigation, among others: evaluation of the optimal resilience for vulnerable infrastructure networks in Switzerland (Swiss National Science Foundation); mitigation of hydro-geological risk in Alpine catchments (EU funds); hazard assessment in application of the Swiss law on natural hazard mitigation for rapid slow landslides (Canton Environment Department, Tessin); laboratory analogue modelling applied to seismic hazard assessment.

Geological mapping

Scientific coordinator and director of three sheets of the Italian national Geological mapping Project (CARG Project): Cairo Montenotte, Imperia and Ventimiglia, the last two integrating land and sea information.

Geosciences outreach

Author and responsible for the Italian national scientific festival “Planet Earth Week” (www.settimanaterra.org): founded in 2012, it has become the largest event of Italian Geosciences and one of the biggest European science festivals. The 2016 edition proposed 310 *Geoevents* and involved 230 different cities.

SUPSI projects, EU founded (Interreg), on natural heritage valorization, among others: SITINET <http://www.sitinet.org>, I Cammini Della Regina <http://www.viaregina.eu>.

FUNDING AGENCIES

World Bank, Italian Ministry of Education (PRIN), Italian regional Authorities, Italian Civil Protection, EU (Interreg, FP7), Department. Swiss National Science Foundation, Swisstopo-Federal Office of Topography,

ACTIVE MEMBERSHIPS IN SCIENTIFIC SOCIETIES

- 2011-2012 President of the Italian Earth Sciences Federation, Onlus; network of 19 Italian scientific societies and 5800 members;
- 2000 to 2006 member of the board of the Italian Geological Society.
- Programme Committee Chair of the VIII Earth Science Forum, Geoitalia2011, 19-23 of September 2011, Torino, Italy ; 1500 attendees.

SELECTED PUBLICATIONS

F. CANOVA, C. TOLOMEI, S. SALVI, G. TOSCANI, S. SENO (2012) - Land subsidence along the Ionian coast of SE Sicily (Italy), detection and analysis via Small Baseline Subset (SBAS) multitemporal differential SAR interferometry. *Earth Surface Processes and Landforms*, 37, 3, 273-286.

MAINO, M., DALLAGIOVANNA, G. DOBSON, K.J., GAGGERO, L., PERSANO, C., SENO, S., STUART, F.M. (2012) - Testing models of orogen exhumation using zircon (U-Th)/He thermochronology: Insight from the Ligurian Alps, Northern Italy. *Tectonophysics*, 560-561, 84-93.

MAINO, M., DALLAGIOVANNA, G., GAGGERO, L., SENO, S., TIEPOLO, M. (2012) - U-Pb zircon geochronological and petrographic constraints on late to post-collisional Variscan magmatism and metamorphism in the Ligurian Alps, Italy. *Geological Journal*, 47 (6), pp. 632-652.

MAINO M., DECARLIS A., FELLETTI F., SENO S. (2013) - Tectono-sedimentary evolution of the Tertiary Piedmont Basin (NW Italy) within the Oligo-Miocene central Mediterranean geodynamics. *TECTONICS*, vol. 32, p. 593-619, ISSN: 0278-7407, doi: 10.1002/tect.20047

DECARLIS, A., DALLAGIOVANNA, G., LUALDI, A., MAINO, M., SENO, S. (2013) - Stratigraphic evolution in the Ligurian Alps between Variscan heritages and the Alpine Tethys opening: A review. *Earth-Science Reviews*, 125, pp. 43-68.

BONINI, L., CALAMITA F., TOSCANI, G., GALUPPO, C. AND SENO, S. (2014) - Three-dimensional segmentation and different rupture behavior during the 2012 Emilia seismic sequence (Northern Italy). *Tectonophysics*, vol. 630, p. 33-42, ISSN: 0040-1951, doi: 10.1016/j.tecto.2014.05.006

DI DOMENICA, A., BONINI, L., CALAMITA F., TOSCANI, G., GALUPPO, C. AND SENO, S. (2014) - Analogue modeling of positive inversion tectonics along differently oriented prethrusting normal faults. An application to the Central-Northern Apennines of Italy. *Geol. Soc. Am. Bulletin*, 126 (7-8), pp. 943-955. doi: 10.1130/B31001.1.

A. DECARLIS, M. MAINO, G. DALLAGIOVANNA, A. LUALDI, E. MASINI, S. SENO, G. TOSCANI (2014) - Salt tectonics in the SW Alps (Italy-France): From rifting to the inversion of the European continental margin in a context of oblique convergence. *Tectonophysics*, vol. 636, p. 293-314, ISSN: 0040-1951, doi: 10.1016/j.tecto.2014.09.003

MAINO M., BONINI L., DALLAGIOVANNA G., SENO S. (2015) - Large sheath folds in the Briançonnais of the Ligurian Alps reconstructed by analysis of minor structures and stratigraphic mapping. *Journal of Maps*, vol. 11, p. 157-167, ISSN: 1744-5647, doi: 10.1080/17445647.2014.959568

BONINI, L., BASILI, R., TOSCANI, G., BURRATO, P., SENO, S., VALENSISE, G. (2015) - The role of pre-existing discontinuities in the development of extensional faults: An analog modeling perspective. *Journal of Structural Geology*, 74, pp. 145-158.

MAINO, M., CASINI, L., CERIANI, A., DECARLIS, A., DI GIULIO, A., SENO, S., SETTI, M., STUART, F.M. (2015) - Dating shallow thrusts with zircon (U-Th)/he thermochronometry-the shear heating connection. *Geology*, 43 (6), pp. 495-498.

MAINO, M., SENO, S. (2016) - The thrust zone of the Ligurian Penninic basal contact (Monte Fronté, Ligurian Alps, Italy). *Journal of Maps*, 12, pp. 341-351. DOI: 10.1080/17445647.2016.1213669.

- BONINI, L., TOSCANI, G., SENO, S. (2016) - Comment on “The May 20 (M 6.1) and 29 (M 6.0), 2012, Emilia (Po Plain, Northern Italy) earthquakes: New seismotectonic implications from subsurface geology and high-quality hypocenter location” by Carannante et al., 2015 (2016) *Tectonophysics*, 688, pp. 182-188. DOI: 10.1016/j.tecto.2016.02.001
- BONINI, L., BASILI, R., TOSCANI, G., BURRATO, P., SENO, S., VALENSISE, G. (2016) - The effects of pre-existing discontinuities on the surface expression of normal faults: Insights from wet-clay analog modeling. (2016) *Tectonophysics*, 684, pp. 157-175. DOI: 10.1016/j.tecto.2015.12.01
- GALUPPO, C., TOSCANI, G., TURRINI, C., BONINI, L., SENO, S. (2016) - Fracture patterns evolution in sandbox fault-related anticlines. *Italian Journal of Geosciences*, 135 (1), pp. 5-16. DOI: 10.3301/IJG.2014.39