Report on the activities of the "Tectonic Geomorphology" IAG Working Group 2014

The IAG Working Group "Tectonic Geomorphology" was established during the 8th International Conference on Geomorphology, held in Paris on August 2013, on proposal of the organizing Committee composed by Monique Fort (Université Diderot Paris VII; France), Giandomenico Fubelli (Universita di Roma TRE, Italy, Jose Miguel Hernadez Hazanon (Universidad de Granata, Spain), Francisco Gutierrez (Universidad de Zaragoza, Spain) and myself (Paola Fredi, La Sapienza Università di Roma).

At present researchers from other countries such as China, India, Algeria, Norvegia have joined the WG.

Its main aims are:

- the methodological improvements as a result of the comparison and integration of different approaches and disciplines;
- promoting international cooperation, training activity and thematic workshops.

The main activity of the WG since its constitution, has been the organization of a specific session to be held during the 2014 EGU General Assembly, scheduled for the end of April. The session title proposed by the WG was "**Intermontane basins: key sites for multidisciplinary approaches to decrypt tectonically active landscapes"**

The proposal has been accepted. The session comprehends an oral slot (six presentations) and a poster session (18 posters) and it is scheduled for May 2nd, following the program enclosed at the end of the report..

As to the future initiatives we are planning the participation to the next Regional IAG Conference and the organization of the WG session, as well as a possible meeting in one of the Countries of the adhering members.

RECENT PAPER BY TECTONIC GEOMORPHOLOGY WG MEMBERS

Azañón, J.M., García-Mayordomo, J., Insua, J.M., **Rodríguez-Peces, M.J.** Seismic hazard of the granada fault [Peligrosidad sísmica de la falla de granada] (2013) *Cuaternario y Geomorfologia*, 27 (3-4), pp. 13-20.

Bianchi Fasani, G., Di Luzio, E., **Esposito, C**., Evans, S.G., Scarascia Mugnozza, G. Quaternary, catastrophic rock avalanches in the Central Apennines (Italy): Relationships with inherited tectonic features, gravity-driven deformations and the geodynamic frame (2014) *Geomorphology* 211 PP. 22 – 42. doi: 10.1016/j.geomorph.2013.12.027

Bozzano, F., Bretschneider, A., **Esposito, C.,** Martino, S., Prestininzi, A., Scarascia Mugnozza, G. Lateral spreading processes in mountain ranges: Insights from an analogue modelling experiment(2013) *Tectonophysics* 605 PP. 88 -95. doi: 10.1016/j.tecto.2013.05.006
Bozzano, F., **Esposito, C.,** Martini, G., Martino, S., Prestininzi, A., Rinaldis, D., Romeo, R.W., Scarascia Mugnozza, G. Earthquake-reactivated landslide scenarios in Southern Italy based on spectral-matching input analysis (2013) *Bulletin of Earthquake Engineering* 11 (6) PP. 1927 – 1948. doi: 10.1007/s10518-013-9477-9
Carbonel, D., **Gutiérrez, F.**, Linares, R., Roqué, C., Zarroca, M., McCalpin, J., Guerrero, J., Rodriguez, V. (2013). Differentiating between gravitational and tectonic faults by means of geomorphological mapping, trenching and geophysical surveys. The case of Zenzano Fault (Iberian Chain, N Spain). Geomorphology, 189, 93-108.
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Della Seta, M., Martino, S., Scarascia Mugnozza, G. (2013) Quaternary sea-level change and slope instability in coastal areas: Insights from the Vasto Landslide (Adriatic coast, central Italy), *Geomorphology*, 201, 468-478.
Di Giulio G., Amoroso S., Di Naccio D., **Falcucci E**., **Gori S**., Hailemikael S., Vassallo M., Ciampaglia A., De Luca G., Del Grosso A., Di Marcantonio P., D'Onofrio K., Porreca M., Trotta D., Villani F., Milana G. (2014).The seismic microzonation of San Gregorio through a multidisciplinary approach. Seismic amplification in a stiff site. *Proceedings of the IAEG XII Congress*, Torino, September 15-19, 2014. Springer Ed.
Esposito, C., Bianchi-Fasani, G., Martino, S., Scarascia-Mugnozza, G. Quaternary gravitational morpho-genesis of Central Apennines (Italy): Insights from the Mt. Genzana case history (2013) *Tectonophysics* 605 PP. 96 - 103. doi: 10.1016/j.tecto.2013.06.023
Falcucci E., **Gori S**. (2014). The origin of scarps in urban areas affected by active and capable normal faulting: only faults? Examples from the 2009 L'Aquila earthquake region (central Italy). *Proceedings of the IAEG XII Congress*, Torino, September 15-19, 2014. Springer Ed.
Falcucci E., **Gori S**., **Della Seta M**., **Fubelli G**., **Fredi P**. Quaternary landscape evolution of tectonically active intermontane basins: the case of the Middle Aterno River Valley (Abruzzo, Central Italy). EGU General Assembly 2014, Vienna, Austria, 27 April-02 May 2014.
Fubelli, G., Della Seta, M., Amato, G. (2014) Drainage system adjustment in response to the opening of the Rieti intermontane basin (Central Italy): geospatial reconstruction of the PaleoFarfa River alluvial plain, *Rendiconti Lincei*, Scienze Fisiche e Naturali, submitted
Giaconia, F., Booth-Rea, G., Martínez-Martínez, J.M., Azañón, J.M., Pérez-Romero, J., Villegas, I. Mountain front migration and drainage captures related to fault segment linkage and growth: The Polopos transpressive fault zone (southeastern Betics, SE Spain) (2013) *Journal of Structural Geology*,
Gori S., **Falcucci E**., Di Giulio G., Moro M., Saroli M., Vassallo M., Ciampaglia A., Di Marcantonio P., Trotta D. (2014).Active normal faulting and large-scale mass wasting in urbanized areas: the San Gregorio village case study (L'Aquila, central Italy). Methodological insight for seismic microzonation studies. *Proceedings of the IAEG XII Congress*, Torino, September 15-19, 2014. Springer Ed.
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Nozaem, R., Mohajjel, M., Rossetti, F., **Della Seta, M**., Vignaroli, G., Yassaghi, A., Salvini, F., Eliassi, M. (2013) Post-Neogene right-lateral strike-slip tectonics at the north-western edge of the Lut Block (Kuh-e-Sarhangi Fault), Central Iran, *Tectonophysics*, 589, 220-233
Pagliaroli A., Avalle A., **Falcucci E**., **Gori S**., Galadini E. Valutazione numerica e sperimentale della risposta sismica locale in contesti geologici complessi: il caso di Castel di Ieri (AQ). IAGIG 2014-*Incontro Annuale dei Giovani Ingegneri Geotecnici*. L'Aquila, April 12, 2014.
Ren J, Zhang S, Meigs A J, et al. 2014. Tectonic controls for transverse drainage and timing of the Xin-Ding paleolake breach in the upper reach of the Hutuo River, north
China. *Geomorphology* 206, 452-467.
Ren, J., Xu, X., Yeats, R.S., Zhang, S., 2013. Millennial slip rates of the Tazang fault, the eastern termination of Kunlun fault: Implications for strain partitioning in eastern
Tibet. *Tectonophysics* 608, 1180-1200.
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partitioning. *Tectonics* 32, 216-238.
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10.1016/j.geomorph.2014.02.004.
Zarroca, M.; Linares, R.; Roqué, C.; Rosell, J.; **Gutiérrez, F.** (2013). Integrated geophysical and morphostratigraphic approach to investigate a coseismic? Translational slide responsible for the destruction of Montclús village (Spanish Pyrenees). *Landslides*, DOI: 10.1007/s10346-013-0427

GM3.2/GD5.10/TS4.6

Intermontane basins: key sites for multidisciplinary approaches to decrypt tectonically active landscapes

ORALS

Friday, 02 May 15:30–17:00, Room G11

	Chairperson:Monique Fort, Jose Miguel Azanon Edit
15:30–15:45	EGU2014-16720[ys] *Gweltaz Mahéo*, Loraine Gourbet, Philippe Hervé Leloup, Philippe Sorrel, David L. Shuster, Jean-Louis Paquette, and Frédéric Quillévéré Western Tibet relief evolution, insight from sedimentary record and thermochronology (solicited)
15:45–16:00	EGU2014-15787[ys] *Wolfgang Schwanghart*, Anne Bernhardt, Amelie Stolle, Basantha Adhikari, and Oliver Korup Reassessing Catastrophic Infill of the Pokhara Valley, Nepal Himalaya
16:00–16:15	EGU2014-6405 *Kai Hartmann*, Bernd Wünnemann, Klaus Reicherter, Andreas Rudersdorf, Maarten Blaauw, Bernhard Diekmann, Judith Bölscher, and Huayu Lu Late-Quaternary morphodynamics of Ejina Basin, Inner Mongolia, China: Quantification of neotectonic subsidence and palaeohydrological implications
16:15–16:30	EGU2014-7977 *Tommaso Piacentini*, Domenico Capolongo, Emanuele Giachetta, Enrico Miccadei, and Tullio Urbano Drainage evolution and connection of intermontane basins in Central Apennines (Italy)
16:30–16:45	EGU2014-13910 Vincenzo Amato, Pietro Patrizio Ciro Aucelli, Massimo Cesarano, and *Carmen Maria Rosskopf* The Middle Pleistocene evolution of the Molise intermontane basins: revision of the chrono-stratigraphic framework and new results inferred from a deep core of the Isernia - Le Piane basin
16:45–17:00	EGU2014-3585[ys] *Juergen Mey*, Dirk Scherler, Manfred R. Strecker, and Gerold Zeilinger Estimating sediment-fill thickness in intermontane valleys using artificial neural networks

POSTERS

Display Time: Friday, 02 May, 08:00–19:30

Attendance Time: Friday, 02 May 17:30–19:00

	Chairperson:Stefano Gori, Francesco Troiani, Marta Della Seta, Paola Fredi, Giandomenico Fubelli Edit
1	EGU2014-15207 *Marco Bacenetti*, Luca Ghiraldi, and Marco Giardino A multidisciplinary geomatics approach to morphometric and morphotectonic analysis of the Cannobino Basin (Piemonte Region, NW-Italy).
2	EGU2014-14512[ys] *Mehdi Rahnama* and Richard Gloaguen Morphotectonic mapping from the analysis of automatically extracted lineaments using Landsat 8 images and SRTM data in the Hindukush-Pamir
3	EGU2014-12238 *Carlo Esposito*, Gabriele Scarascia Mugnozza, Marco Tallini, and Marta Della Seta Evidence of Quaternary rock avalanches in the central Apennines: new data and interpretation of the huge clastic deposit of the L'Aquila basin (central Apennines, Italy)
4	EGU2014-4030[ys] *Mohammad Al-Awabdeh*, J. Vicente Pérez-Peña, J. Miguel Azañón, and Guillermo Booth-Rea Neotectonic of Dead Sea pull-apart basin. A new tectonic model for its northern closure
5	EGU2014-4269 *Emanuela Falcucci*, Stefano Gori, Marta Della Seta, Giandomenico Fubelli, and Paola Fredi Quaternary landscape evolution of tectonically active intermontane basins: the case of the Middle Aterno River Valley (Abruzzo, Central Italy)

6	EGU2014-5297[ys] *Francisco Javier Roldán*, Jesus Galindo, Patricia Ruano, Ahmed Chalouan, Antonio Pedrera, Mfedal Ahmamoud, Ana Ruiz, Carlos Sanz, Mohammed Benmakhlouf, Angel Carlos Lopez, and Lourdes Gonzalez Curved thrusts from associated basin depocenters. Basement Paleozoique the morphologyc control. The Rides Prerifaines in the Volubilis Basin (Rif Cordillera, Morocco)
7	EGU2014-5352 *Francisco Javier Roldán*, Jose Miguel Azañon, Jose Rodríguez, and Rosa Maria Mateos Extensional Detachment faulting in melange rocks. Plurikilometres migration by W the External Zone (Cordillera Bética, Spain)
8	EGU2014-4048[ys] *Mohammad Al-Awabdeh*, J. Miguel Azañón, J. Vicente Pérez-Peña, and Gillermo Booth-Rea Archaeological evidences of the tectonic activity of Shueib Structure (NW Jordan)
9	EGU2014-305[ys] *Alejandro Jiménez-Bonilla*, Juan Carlos Balanyá, Inmaculada Expósito, Manuel Díaz-Azpiroz, and Leticia Barcos Tectonic constraints on the development and individualization of the intermontane Ronda basin (external Betics, southern Spain): a structural and geomorphologic approach.
10	EGU2014-1771[ys] *Francesco Troiani* and Marco Menichetti Morphostructural characterization of the Charco basin and its surrounding areas in the Chihuahua segment of north Mexican Basin and Range Province
11	EGU2014-3693 *José Morales*, Juan V. Cantavella, José V. Perez-Peña, Rosa Martín, Daniel Stich, José M. Azañon, Antonio Gonzalez-Ramón, Francisco J. Roldán, and José B. Martín Fine fault structure of the 2012-2013 earthquake swarm in the eastern Guadalquivir basin (South Spain)
12	EGU2014-5323 *Francisco Javier Roldán*, Jose Miguel Azañon, and Rosa Maria Mateos The Eastern delta-fan deposits on the Granada Basin as tectonic indicators of the Sierra Nevada uplift (Betic Cordillera, South Spain)
13	EGU2014-6190[ys] *Deborah Di Naccio*, Francesco Brozzetti, Paolo Boncio, and Giusy Lavecchia The Lunigiana and Garfagnana grabens (Northern Italy): geological and morphotectonic evidences of active normal faults
14	EGU2014-9359 Konstantinos Tsanakas, *Giandomenico Fubelli*, and Efthimios Karymbalis Geomorphic impacts of active tectonics on a river course, the case of Klissoura gorge, central Greece.
15	EGU2014-11597[ys] *Paolo Cavitolo*, Marco Menichetti, Olivia Nesci, Daniele Savelli, and Francesco Troiani Structural and morphological characterization of active intermontane basins: a case of the Gubbio captured basin (Umbria Pre-Apennines, Italy)
16	EGU2014-13881 Flavio Giaconia, Guillermo Booth-Rea, Jose Miguel Martínez-Martínez, and *Jose Miguel Azañon* Late Miocene extension partitioning in the eastern Betics: from W- to E-directed extension between the Sorbas and Vera basins (SE Spain).
17	EGU2014-14878 *Marco Nocentini*, Marco Tallini, Riccardo Asti, and Domenico Cosentino Late Quaternary river incision rate from L'Aquila-Scoppito Basin (central Apennines, Italy)
18	EGU2014-7637 *Jose miguel Azañon*, Jose Rodriguez-Fernandez, Francisco Javier Roldan-Garcia, Guillermo Booth-Rea, Vicente Perez-Peña, Flor de Lis Mancilla, Jose Morales, Daniel Stich, and Flavio Giaconia The role of strike-slip faults on the origin and evolution of the northernmost Betic intermontane basins