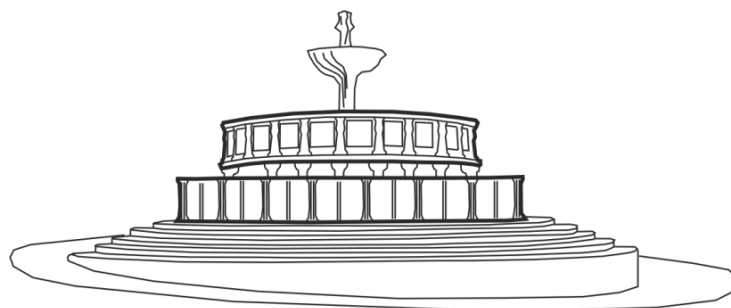


TOOLS, DATA AND MODELS FOR 3D SEISMOTECTONICS: THE ITALIAN OVER TIME LABORATORY

A CRUST INTERDISCIPLINARY WORKSHOP
IN MEMORY OF GIAMPAOLO PIALLI



DIPARTIMENTO
DI FISICA E GEOLOGIA



Perugia, 9-10 July 2019

Program of Oral and Poster Sessions



Tuesday, 09 July 2019

08.30-9.30 ***Registration***

9.30-11.00 ***Workshop opening and Giampaolo Pialli commemoration***

1. Greetings from the Authorities

Prof. Franco Moriconi, Magnifico Rettore Università degli Studi di Perugia

Prof. Francesco Tei, Head of DSA3 (Department of Agricultural, Food and Environmental Sciences)

Prof. Massimiliano R. Barchi, Head of the Department of Physics and Geology

2. Commemoration of Prof. Giampaolo Pialli from family, colleagues and friends

3. Scientific Introduction from Giusy Lavecchia (first Pialli's research student and Head of CRUST)

"Structural geology for Seismotectonics: a scientific adventure that began 40 years ago with Giampaolo Pialli"

11.00-11.30 ***Coffee break***

11.30-13.10 ***Oral session 1 - Natural and anthropogenic seismicity for seismotectonic purposes (Chairperson: R. Scarpa)***

1. Doglioni C. (INGV) - On the Italian seismicity

2. Chiaraluce L. (INGV) - From seismic sequences to Near Fault Observatories: the relevance of continuous and high-resolution monitoring of the seismic activity

3. La Rocca M. (Università della Calabria) - Seismic scattering and absorption imaging in the Pollino range

4. Magnani M.B. (Southern Methodist University, USA) - Discriminating between natural vs induced seismicity from long-term deformation history of intraplate faults

5. Valoroso L. (INGV) - Spatiotemporal distribution of natural and anthropogenic seismicity in the Val d'Agri basin (Southern Apennines, Italy)

13.10-14.30 ***Buffet Lunch (Chiostro di S. Pietro)***

14.30-16.10 ***Oral session 2 - Geophysical and geological modelling in seismotectonic analysis (Chairperson: F. Pazzaglia)***

1. De Siena L. (Johannes Gutenberg University, Germany) - Imaging crustal architecture and modelling its dynamics with seismic attenuation imaging

2. Caporali A. (Università di Padova) - A time dependent model of elastic stress in the Central Apennines, Italy

3. Maggini M. (Università di Ferrara, CRUST) - Rheological modelling as a contribution for the seismotectonics of the Aegean Region

4. Paoletti V. (Università di Napoli, CRUST) - The role of gravity modeling in seismotectonics analysis

5. Livio F. (Università dell'Insubria) - The role of near-surface lithology in relation with fault tip propagation: a case study using trishear inverse modeling

16.10-16.30 *Coffee break*

16.30-20.00 *POSTER session*

1. *PICO poster session*

Short presentation of the Posters participating to the competition for Young Scientist CRUST Award in “Interdisciplinary research in Seismotectonics”

2. Visit to Posters exposition (see *Poster Session* for the list of the Posters) and **delicious Appetizer**

Wednesdays, 10 July 2019

09.00-11.00 *Oral Session 3 - Active faulting and seismic ruptures (Chairperson: M. Mattei)*

1. Arrowsmith R. (Arizona State University, USA) - Sharpening our view of active faulting processes with high resolution topography
2. Pazzaglia F.J. (Lehigh University, USA) - Active tectonics and surface faulting in central Italy: stress reorientation, blind normal faults, and the march of a continental divide above an active, low-angle detachment
3. Menichetti M. (Università di Urbino, CRUST) - Geometries and kinematics of the coseismic ruptures
4. Liotta D. (Università di Bari) - Pliocene-Quaternary fault kinematics in the Larderello geothermal area (Italy): insights for the interpretation of the Present stress field
5. Ferranti L. (Università di Napoli, CRUST) - Speleoseismological constraints on ground shaking threshold and seismogenic sources in the Pollino range (Calabria, Southern Italy)
6. Gambino S. (Università di Catania, CRUST) - Active faulting offshore Southeast Sicily: implication for seismogenic sources

11.00-11.30 *Coffee break*

11.30-13.30 *Oral session 4 - Active tectonics and seismotectonics: case studies from Italy (Chairperson: R. Arrowsmith)*

1. Barchi M.R. (Università di Perugia, CRUST) - Seismic expression of seismogenic faults: experiences from the Central Italy normal faults
2. Barreca G. (Università di Catania, CRUST) - A new seismic imaging of the Messina Strait and seismotectonic implications
3. Vignaroli G. (Università di Bologna) - Early-Middle Pleistocene extensional faulting in the Amatrice Basin (central Apennines, Italy) at the hanging wall of the seismogenic structures

4. Tondi E. (Università di Camerino) - The Campotosto relay-growing fault zone in between the 2009 and 2016–2017 seismic sequences of central Italy: implications for seismic hazard analysis
5. Pepe F. (Università di Palermo, CRUST) - Active tectonics in the Santa Eufemia Gulf revealed by ultra-high-resolution seismic reflection
6. Brogi A. (Università di Bari) - Long-living seismogenic faults system in the Val d'Elsa Basin (southern Tuscany) and their role in controlling the local seismicity

13.30-14.30 *Buffet Lunch (Chiostro di S. Pietro)*

14.30-16.10 *Oral session 5 - Laboratory approaches and 3D fault models (Chairperson: M.B. Magnani)*

1. Collettini C. (Università La Sapienza) - The Northern Apennines as a key-area to study the mechanics of low-angle normal faults: what we have done in the last 20 years following Piali's suggestions.
2. Corbi F. (Università di Roma Tre, CRUST) - How seismotectonic analog modelling can contribute improving megathrust hazard assessment
3. D'Ambrogi C. (Servizio Geologico d'Italia - ISPRA) - Geological 3D modeling in a seismic country: lessons learned and step forwards
4. Fondriest M. (Università di Padova) - Three-dimensional anatomy of an active seismic source: kinematic complexity and structural inheritance constrained by field observations and present-day seismic activity (Central Apennines, Italy)
5. Bonali F.L. (Università Milano-Bicocca, CRUST) - Immersive Virtual Reality as a novel tool for active tectonic and volcano-tectonic studies: key examples from Iceland and Santorini

16.10-17.00 *Conclusions and CRUST Award for the Outstanding Poster*

POSTER session

Tuesday 09 July, 16.30 – 20.00

* Poster participating in the Competition

Panel of Judges for Poster Competition:

- *De Siena L. – Johannes Gutenberg University*
- *Anastasio D. - Lehigh University*
- *Neri G. - Università di Messina*

1. Aourari Sahra National Centre Res Applied Earthquake Eng.(CGS) - Prospecting of tectonic indications near a supposed active zone in Setif region-eastern Algeria
2. Azzaro Salvatore Università di Perugia Insights on the subsurface geology of the central Apennines by the use of 3D geological models
3. * Bello Simone Università di Chieti The 1983 Borah Peak earthquake (Mw7.3, Io IX MCS) (USA) - New evidence from surface rupture and 3D fault segmentation patterns from high-resolution topography and field observations along the Lost River fault.
4. Brogi Andrea Università di Bari Latest Quaternary tectonic activity in the Bagno Vignoni-Valdorcio area (inner Northern Apennines, Italy) recorded by travertine deposits
5. Caporali Alessandro Uni Padova Present Day Geokinematics of Central Europe
6. * Carducci Andrea Università di Chieti Seismological and statistical trends in Central Apennines (Italy) before and during the Amatrice-Norcia sequence
7. * Carnes Lorraine Arizona State University Reconciling sinuosity changes in ancient Mississippi River meanders in the context of
8. * Cirillo Daniele Università di Chieti New mapping techniques for structural-geologist using Drone and Tablet: an application to the coseismic effects of 30 October 2016 Central Italy earthquake (Mw 6.5)
9. * Cirillo Daniele Università di Chieti 3D Fault geometry from field and seismological data: the seismogenic fault system in the Mt. Pollino area (Calabria-Lucania boundary, southern Italy)
10. Corti Noemi UniMi Bicocca Active deformations at rift-transform fault intersections: the case of the Theistareykir Rift (Northern Iceland)
11. De Nardis Rita Università di Chieti Focal Mechanisms for middle-crust to upper mantle earthquakes beneath Central-Eastern Italy: implication for geodynamic context
12. De Nardis Rita Università di Chieti Background seismicity vs. earthquake clustering: quantitative analyses of case studies in central Italy for seismotectonics purposes.
13. Del Rio Luca Università di Padova Slipping zones associated with seismic faults and gravitational slope deformations in carbonate-built rocks (Central Apennines, Italy)

14. Ercoli Maurizio Università di Perugia Seismic attributes, an innovative tool for seismotectonic research: results from the epicentral area of the 2016 Norcia Mw 6.5 earthquake (Central Italy)
- 15.* Ercoli Maurizio Università di Perugia Ambient vibration measurements to reveal the deep architecture of the Norcia basin in Central Italy
- 16.* Famiani Daniela INGV Hidden geometries reconstruction and site effects estimation: first results from geophysical investigations in the Valle Umbra basin (central Italy)
- 17.* Famiani Daniela INGV Seismicity observed in the Mt. Amiata Geothermal Area
- 18.* Famiani Daniela INGV First results of CISA, the new Central Italy Seismic Array
19. Ferrarini Federica Università di Chieti Testing Late Quaternary tectonics in low-rate contractional settings – preliminary outcomes from fluvial network analysis along the Southern Apennine Outer compressional Front (SAOF)
- 20.* Ferrario Francesca Università dell'Insubria Surface faulting in-depth: the Central Italy 2016-2017 seismic sequence
- 21.* Ferraro Francesco Università della Basilicata Controls of diagenesis on petrophysical properties of carbonate fault rocks
- 22.* Galderisi Antonio Università di Chieti Coseismic scratches along Mount Vettore Fault System (2016 central Italy earthquake). Implications on offset components and fault-block motion.
- 23.* Giampietro Tiziano GEOAZUR, Nice Structural architecture and damage zones in relay zones of normal fault systems: the Vecchiano (Pisa) case study and experimental modelling
- 24.* Giorgetti Claudia Università di Perugia Seismic reflection profiles and geological cross-sections across the area of the 2016-2017 seismic sequence: comparison with seismological data
- 25.* Kibret Birhanu Addis Ababa University Crustal thickness estimates beneath four seismic stations in Ethiopia inferred from p-wave receiver function studies
- 26.* Mancinelli Paolo Università di Perugia 3D gravity inversion across the Central and Northern Apennines
27. Matera Paola Università di Bari Tectonic activity and palaeoseismicity reconstruction: implications from texture, geochemistry and development of banded calcite veins in travertine depositional systems
28. Mattei Massimo Università Roma Tre Flexural-slip and fold growing in the Tabas (central Iran) active folding deduced by AMS and structural analyses
29. Mazzoni Andrea Università di Perugia Quaternary drainage inversion driven by progressive extension in central Umbria, Italy
30. Menichetti Marco Università di Urbino Maps of the coseismic ruptures of the 2016 earthquakes in the Sibillini mountains (Central Italy)
31. Monaco Carmelo Università di Catania The seismogenic source of the 2018 December 26th earthquake (Mt. Etna, Italy): a shear zone in the unstable eastern flank of the volcano

32. Motti Andrea Regione Umbria Lo sviluppo delle microzonazioni sismiche in Umbria
33. Motti Andrea Regione Umbria La rappresentatività geologica
- 34.* Napolitano Ferdinando Università di Salerno Imaging of the 2010-2014 structures in the Pollino area from relative locations of microearthquakes
35. Nirta Giuseppe CNR Firenze Active normal faulting in the Garfagnana and Lunigiana basins. New data from Lidar image analysis and field mapping.
- 36.* Nurminen Fiiia Università di Chieti Probabilistic fault displacement hazard maps for thrust faults - modelling based on new empirical regressions for distributed faulting
37. Orecchio Barbara Università di Messina Seismogenic stress constraints to geodynamic modeling of southern Italy
- 38.* Panara Yuri Università di Pavia Reproduced coseismic ground deformation through numerical modeling: a sensitivity analysis on geological and rheological parameters.
39. Pantosti Daniela INGV Relationships between geological long-term and coseismic surface slip distributions of the 2016-2017 earthquake rupture (central Italy): hints for fault system behaviour and interactions
- 40.* Parrino Niccolò Università di Palermo Active tectonics in NW-Sicily detected through morphometric and geodetic analyses
41. Pastori Marina INGV Shear wave splitting evidence and relations with stress field and main fault from the "Amatrice-Visso-Norcia Seismic Sequence"
- 42.* Patricelli Giulia Università di Udine 3D geometry of the buried quaternary faults in the NE-Friuli plain
43. Patricelli Giulia Università di Udine Transpressive tectonic activity along the Borgo Faris-Cividale fault (NE-Italy)
- 44.* Pirrotta Claudia Università di Catania Geological/seismological data to infer a fault model for the south-eastern Sicily 1693 earthquakes.
45. Pucci Stefano INGV Geometry and evolution of the Middle Aterno Quaternary basin and relationship with the 2009 L'Aquila earthquake causative fault system (Abruzzi Apennines, Italy)
- 46.* Puliti Irene Università di Chieti Comparing coseismic slip with cumulative displacements at various time scales on the Mt. Vettore- Mt. Bove fault system after the 2016 central Italy earthquakes: Insights into growth and segmentation processes of an active extensional system
47. Roccheggiani Matteo Università di Urbino Are InSAR data tool to aid the field geological survey of coseismic ruptures?
- 48.* Russo Elena Università Mi-Bicocca New findings by recent seismic data and Coulomb stress transfer in the Yellowstone region
49. Sparacino Federica INGV Crustal deformation along the Nubia-Iberia plate boundary

50. Sparacino Federica INGV Crustal deformation pattern for the Aegian - Anatolian region from a dense GPS-based velocity field
- 51.* Teloni Simone Università di Camerino Seismic activity in the Marche foothills and Adriatic offshore: modelling from revised deep seismic profiles and seismological data
52. Tibaldi Alessandro Università Mi-Bicocca Seismotectonics of central-western Caucasus, Republic of Georgia
53. Tirincanti Emanuela Università di Urbino Structural setting and seismotectonics of the Adriatic foreland of the Marche-Romagna Apennines
54. Toscani Giovanni Università Pavia 3d Plio-Pleistocene architecture and evolution of the Po plain/northern Adriatic foredeep
- 55.* Trippetta Fabio Università La Sapienza Seismic velocities of carbonates from the Apennines
- 56.* Villegas Sara Figueroa Potsdam University Late Pleistocene to Recent shortening rates in the broken foreland of NW Argentina: New observations from the intermontane Cafayate Valley, 26° S lat.
57. Zanchi Andrea Università Mi-Bicocca Holocene thrusting at Montodine (Cremona Italy): evidence for recent surface faulting