

CONVENERS:

Dr. Luciano Zuccarelli | *Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Catania-Osservatorio Etneo (Italy)* • luciano.zuccarelli@ingv.it
Silvio De Angelis | *University of Liverpool (UK)* • s.de-angelis@liverpool.ac.uk
Jesus Ibanez | *Instituto Andaluz de Geofisica, University of Granada (Spain)* • jibanez@ugr.es
Christopher Bean | *Dublin Institute for Advanced Studies-Geophysics Section-School of Cosmic Physics (Ireland)* • chris.bean@dias.ie
Andrea Cannata | *University of Perugia (Italy)* • andrea.cannata@unipg.it
Ivan Lockmer | *University College of Dublin (Ireland)* • ivan.lockmer@ucd.ie

S01.40 - Advanced Processing Techniques for Geophysical Signals Recorded at Active Volcanoes

Time	ID	Title	Author Name	Affiliations	Presenter Name
8.30 - 8.45	333	Integrating time-dependent data at Mount St. Helens (2004-2008) using physics-based conduit models	Ying-Qi Wong (1) Paul Segall (1)	(1) Stanford University	Ying-Qi Wong
8.45 - 9.00	490	Linking volcano infrasound observations with source processes: comparing analytical models with computational fluid dynamics simulations	Leighton Watson (1) Eric Dunham (1,2)	(1) Department of Geophysics, Stanford University (2) Institute of Computational and Mathematical Engineering, Stanford University	Leighton Watson
9.00 - 9.15	681	Towards remote estimation of volcanic plume source parameters from regional infrasound arrays	Anna Perttu (1) B. Taisne (1,2) D. Tailpied (1) D. Whilldin (1) D. Hidayat (1) D. Basuki (3) A. Kristianto (3) H. Triastuty(3)	(1) Earth Observatory of Singapore, Nanyang Technological University (2) Asian School of the Environment, Nanyang Technological University (3) Center for Volcanology and Geological Hazard Mitigation, Bandung, Indonesia	Anna Perttu
9.15 - 9.30	798	Decoupling the volcano infrasound source from the crater acoustic response	Jeffrey Johnson (1) Marco Almeida (2) Jacob Anderson (1) Julien Barrière (3) Andrea Cannata (4) Nicolas d'Oreye (3) Eric Dunham (5) Bruce Houghton (6) Francois Kervyn (7) Keehoon Kim (8) Daniele Morgavi (4) Hugo Ortiz (9) Adrien Oth (3) Jose Palma (10) Patricio Ramon (2) Mario Ruiz (2) Benoit Smets (7) Laura Spina (4) Nicolas Turner (6) Guillermo Viracucha (2) Leighton Watson (5)	(1) Boise State University (US) (2) Instituto Geofísico Escuela Politécnica Nacional (Ecuador) (3) European Center for Geophysics and Seismology (Luxembourg) (4) Università di Perugia (Italy) (5) Stanford University (US) (6) University of Hawaii Manoa (US) (7) Royal Museum for Central Africa (Belgium) (8) Lawrence Livermore National Laboratory (US) (9) Pontificia Universidad Católica (Ecuador) (10) Univesidad de Concepción (Chile)	Jeffrey B Johnson
9.30 - 9.45	373	The VULCAN.ears project: an Esperanto for the volcano-seismic event recognition as a portable tool for real-time monitoring and eruption forecasting	Guillermo Cortés (1) Philippe Lesage (2) Roberto Carniel (1) Javier Almendros (3) Carmen Benítez (4) Raúl Arámbula-Mendoza (5)	(1) Dipartimento Politecnico di Ingegneria e Architettura, Università degli Studi di Udine, Udine, Italy. (2) Université Grenoble Alpes, Université Savoie Mont Blanc, CNRS, IRD, IFSTTAR, ISTerre, 38000 Grenoble, France. (3) Instituto Andaluz de Geofísica y Prevención de Desastres Sísmicos, Universidad de Granada, Granada, Spain. (4) Departamento de Teoría de la Señal, Telemática y Comunicaciones, E. T. S. de Ingenierías Informática y de Telecomunicación. Universidad de Granada, Granada, Spain. (5) Centro Universitario de Estudios e Investigaciones en Vulcanología, Colima, Mexico.	Guillermo Cortés
9.45 - 10.00	461	Recurrent Neural Networks as Automatic Volcano-Seismic Recognition Systems in real-time	M. Titos A. Bueno L. García I. Álvarez S. Mota J. Ibáñez M.C. Benítez	Universidad de Granada Universidad de Granada Universidad de Granada Universidad de Granada Universidad de Granada Universidad de Granada	Manuel Titos
10.00 - 10.15	467	Automatic Classification of Volcano-Seismic Events with Convolutional Neural Networks	Angel Bueno Rodriguez (1) Manuel Titos Luzon (1) Alejandro Diaz Moreno (2) Silvio De Angelis (2) Luciano Zuccarelli (1) Luz Garcia (1) Carmen Benitez (1) Jesús M. Ibáñez (3)	(1) Department of Signal Theory, Telematic and Communications, Granada, Spain (2) Department of Earth, Ocean and Ecological Sciences, University of Liverpool, Liverpool, UK (3) Instituto Andaluz de Geofísica, Granada, Spain	Angel Bueno Rodriguez
10.15 - 10.30	843	Application of Machine Learning Techniques to distinguish and classify Low Frequency events during the 2015 Cotopaxi Volcano reawakening	Juan Anzieta (1) Mario Ruiz (2) Hugo Ortiz (1)	(1) Pontificia Universidad Católica del Ecuador, Quito - Ecuador (2) Instituto Geofísico de la Escuela Politécnica Nacional, Quito - Ecuador	Juan Anzieta

S01.40 - Advanced Processing Techniques for Geophysical Signals Recorded at Active Volcanoes

Position	ID	Title	Author Name	Affiliations	Presenter Name
06 - 84.	92	Geodetic image of a low viscosity zone beneath the Kutcharo caldera, eastern Hokkaido, Japan	Tadashi Yamasaki (1) Tomokazu Kobayashi (2)	(1) Geological Survey of Japan, AIST (2) Geospatial Information Authority of Japan	Tadashi Yamasaki
06 - 85.	194	Surface Deformation and Source Model at Semisopochnoi Volcano from InSAR and Seismic Analysis During the 2014 and 2015 Seismic Swarms	Kimberly DeGrandpre (1) Jeremy Pesicek (2) Zhong Lu (1) Heather DeShon (1)	(1) Huffington Department of Earth Sciences, Southern Methodist University, Dallas, TX, USA (2) Volcano Disaster Assistance Program, USGS Volcano Science Center, Vancouver, WA, USA	Kimberly DeGrandpre
06 - 86.	267	Tracking rockfalls and landslides in real-time at Stromboli volcano	Maria Cristina Silengo (1) Marco Laiolo (2) Corrado Cigolini (1) Maurizio Ripepe (2)	(1) University of Turin (2) University of Florence	Maria Cristina Silengo
06 - 87.	280	Observation and preliminary analysis of drumbeat seismicity at Turrialba volcano, Costa Rica	Philippe Lesage (1) Titouan Muzellec (1) Mauricio M. Mora (2,3) Javier Pacheco (4)	(1) Université Grenoble Alpes, Université Savoie Mont Blanc, CNRS, IRD, IFSTTAR, ISTERre, 38000 Grenoble, France. (2) Escuela Centroamericana de Geología, Universidad de Costa Rica, San José, Costa Rica (3) Red Sismológica Nacional (RSN: UCR-ICE), Universidad de Costa Rica, San José, Costa Rica (4) Observatorio Volcanológico y Sismológico de Costa Rica, Universidad Nacional, Heredia, Costa Rica	Philippe Lesage
06 - 88.	321	Mt. Etna feeding system: a new 3D image constrained by earthquakes distribution and 3D modelling analysis in a customizable GIS	Roberto Guardo (1,4) Luca De Siena (2) Andres Colubri (3) Carola Dreidemie (4)	(1) CONICET - UNRN (2) University of Aberdeen (3) Broad Institute of Harvard and MIT (4) LVCC - UNRN	Roberto Guardo
06 - 89.	376	Investigating large-scale change in seismic time-series data using machine learning analysis.	Grace F. Manley (1) David M. Pyle (1) Tamsin A. Mather (1) Mel Rodgers (2) Benjamin G. Stokell (3) David A. Clifton (4) Marco A. F. Pimentel (4) Glenn Thompson (2) John Makario Londoño (5) Diana Roman (6)	(1) Department of Earth Sciences, University of Oxford, UK (2) School of Geosciences, University of South Florida, USA (3) Department of Pure Mathematics and Mathematical Statistics, University of Cambridge, UK (4) Department of Engineering Science, University of Oxford, UK (5) Observatorio Volcanológico y Sismológico de Manizales, Colombia (6) Department of Terrestrial Magnetism, Carnegie Institution of Washington, USA	Grace F. Manley
06 - 90.	440	Deformation time-series integrated with multidisciplinary data to constrain source processes: Evidence of magma recharge at Colli Albani, the volcanic district at the gates of Rome (Italy)	Elisa Trasatti (1) Fabrizio Marra (1) Marco Polcari (1) Giuseppe Etiope (1) Giancarlo Ciotoli (2) Thomas H. Darrah (3) Dario Tedesco (4) Salvatore Stramondo (1) Fabio Florindo (1) Guido Ventura (1)	(1) INGV (2) CNR IGAG (3) Ohio State University (4) University of Naples II	Elisa Trasatti
06 - 91.	452	Advanced time-series processing techniques of thermal infrared images acquired by the permanent IR surveillance network of INGV - Osservatorio Vesuviano at Campi Flegrei and Vesuvius (Italy)	Fabio Sansivero (1) Giuseppe Vilardo (1) Teresa Caputo (1)	(1) Istituto Nazionale di Geofisica e Vulcanologia sez. Osservatorio Vesuviano, Napoli ITALY	Fabio Sansivero
06 - 92.	463	Using Exploratory Data Analysis in Volcano Seismic Signals.	M.C. Benítez (1) A. Bueno (1) M. Titos (1) J. Camacho (1) L. Garcia (1) J. Ibañez (1)(2)	(1) UGR (2) IAG	Carmen Benitez
06 - 93.	469	Automatic P- and S- Phase Picking: an Insight to Planchón-Peteroa Volcano-tectonic earthquakes.	Veronica L. Martinez (1) Luz García Martínez (2) Isaac Alvarez (2) Gabriela A. Badi (1,7) Luciano Zuccarello (2,3) Jesus Ibañez (4,5) Maria Carmen Benitez (2) Jose Augusto Casas (1,6) Victoria H. Olivera Craig (1)	(1) Universidad Nacional de La Plata, Facultad de Cs. Astronómicas y Geofísicas, Argentina. (2) Universidad de Granada, Dpto. de Teoría de la Señal, Telemática y Comunicaciones ETSI Informática y de Telecomunicación, Spain (3) Istituto Nazionale di Geofisica e Vulcanologia, -Sezione di Catania - Osservatorio Etno, Italy (4) Universidad de Granada, Dpto. de Física Teórica y del Cosmos, Spain (5) Instituto Andaluz de Geofísica, Universidad de Granada, Spain (6) CONICET, Argentina (7) SEGEMAR, Argentina	Veronica L. Martinez
06 - 94.	471	Contributions from seismic interferometry to the knowledge of Andean volcanoes: the cases of Planchon-Peteroa (Argentina-Chile) and Cuicocha (Ecuador)	Augusto Casas (1) Deyan Draganov (2) Gabriela Badi (3,10) Dylan Mikesell (4) Victoria Olivera Craig (3) Constanza Manassero (3) Elmer Ruigrok (5) Simone Lepore (6) Luis Franco (7) Mario Ruiz (8) Verónica Martínez (3) Martín Gómez (9) Sebastián García (10)	(1) Facultad de Ciencias Astronómicas y Geofísicas, Universidad Nacional de La Plata, CONICET, Argentina (2) Department of Geoscience and Engineering, Delft University of Technology, the Netherlands (3) Facultad de Ciencias Astronómicas y Geofísicas, Universidad Nacional de La Plata, Argentina (4) Environmental Seismology Laboratory, Department of Geosciences, Boise State University, USA (5) RandD Seismology and Acoustics, Royal Netherlands Meteorological Institute, the Netherlands (6) Institute of Geophysics, Faculty of Physics, University of Warsaw, Poland (7) Observatorio Volcanológico de los Andes del Sur, SERNAGEOMIN, Chile (8) Instituto Geofísico, Escuela Politécnica Nacional, Ecuador (9) International Center for Earth Sciences, Comisión Nacional de Energía Atómica, Argentina (10) Servicio Geológico y Minero Argentino (SeGeMAR), Argentina	Augusto Casas
06 - 95.	592	Analogue and Numerical modelling of double-piston piecemeal calderas	Eda Aydın (1) İnan Ulusoy (1) Efe Akkaş (1)	(1) Hacettepe Univ. Dept. of Geological Engineering, 06800, Beytepe-Ankara, Turkey	Eda Aydın
06 - 96.	718	New evidences on the structure of Popocatepetl Volcano using aeromagnetic data	Tomás González-Morán (1) Ana Lillian Martín Del Pozzo (1)	(1) Instituto de Geofísica, Universidad Nacional Autónoma de México	Tomás González-Morán

S01.40 - Advanced Processing Techniques for Geophysical Signals Recorded at Active Volcanoes

Position	ID	Title	Author Name	Affiliations	Presenter Name
06 - 97.	814	Statistical Analysis of Infrasonic Signals and Eruption Forecasting at Reventador Volcano (Ecuador)	Hugo D. Ortiz (1) Jeffrey B. Johnson (2) Mario C. Ruiz (3) Juan C. Anzieta (1) Gabriela A. Badi (4) Matthew R. VonLintig (2) Patricio G. Ramón (3)	(1) Pontificia Universidad Católica del Ecuador (2) Boise State University (3) Escuela Politécnica Nacional (4) Universidad Nacional de la Plata	Hugo D. Ortiz
06 - 98.	818	Automated alarms at the Alaska Volcano Observatory	Aaron Wech (1) Matt Haney (1) John Lyons (1) Tom Parker (1) Steve Botnick (1)	(1) Alaska Volcano Observatory, USGS	Aaron Wech
06 - 99.	819	Optimizing detection capabilities of remote infrasound network in Southeast Asia in a context of timely automated volcano early warning	Dorianne Tailpied (1), Benoit Taisne (1,2), Anna Perttu (1)	(1) Earth Observatory of Singapore, Nanyang Technological University. (2) Asian School of the Environment, Nanyang Technological University	Dorianne Tailpied
06 - 100.	879	Under Pressure: How does Crustal Rheology Influence the Interpretation of Volcanic Unrest?	Matthew Head (1) James Hickey (1) Nico Fournier (2) Jo Gottsmann (3)	(1) University of Exeter (2) GNS Science (3) University of Bristol	Matthew Head
06 - 101.	900	On the relevance of microgravity measurements in the detection of active, shallow magmatic systems	Paolo Papale (1) Chiara Paola Montagna (1) Antonella Longo (1)	(1) INGV Pisa	Paolo Papale
06 - 102.	915	Dike propagation energy balance from deformation modeling and seismic release	Alessandro Bonaccorso (1) Yosuke Aoki (2) Eleonora Rivalta (3)	(1) Osservatorio Etneo (INGV-OE) - Sezione di Catania, Istituto Nazionale di Geofisica e Vulcanologia, Catania, Italy (2) Earthquake Research Institute, University of Tokyo (3) Helmholtz-Zentrum Potsdam - Deutsches GeoForschungsZentrum GFZ, Potsdam, Germany	Alessandro Bonaccorso
06 - 103.	938	Automatic detection of Long Period events based on the advanced subband analysis algorithm SALPED	Isaac Alvarez (1) Luciano Zuccarello (1,2) Luz García Martínez (1) Arianna Cuius (3) Giuseppe Di Grazia (2) María Carmen Benítez (1) Jesús M. Ibáñez (4,5) Stefano Gresta (3)	(1) Universidad de Granada, Dpto. de Teoría de la Señal, Telemática y Comunicaciones ETSI Informática y de Telecomunicación Universidad de Granada, Spain (2) Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Catania - Osservatorio Etneo, Italy (3) Università degli Studi di Catania, Dipartimento di Scienze Geologiche, Biologiche ed Ambientali, Italy (4) Universidad de Granada, Departamento de Física Teórica y del Cosmos, Spain (5) Instituto Andaluz de Geofísica, Universidad de Granada, Spain	Isaac Alvarez
06 - 104.	1022	Integration of InSAR time series and GNSS data for reconstructing the 3D ground deformation of Etna in the last 4 years	Alessandro Bonforte Francesco Guglielmino	Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Catania - Osservatorio Etneo	Alessandro Bonforte
06 - 105.	1187	Sea-level oscillations and Ground Displacements by means of Tide Gauge Network: Neapolitan volcanic area case study.	Umberto Tammaro (1) Francesco Obrizzo (1) Adriano La Rocca (1) Salvatore Pinto (1) Giuseppe Brandi (1) Enrico Vertechì (1) Paolo Capuano (2)	(1) Istituto Nazionale di Geofisica e Vulcanologia, Osservatorio Vesuviano, Naples, Italy. (2) Università di Salerno, Dipartimento di Fisica "E.R. Caianiello"	Umberto Tammaro
06 - 106.	1188	Dynamics of Vulcano Island (Tyrrhenian Sea, Italy) investigated by long-term (40 years) geophysical data	Salvatore Alparone (1) Alessandro Bonforte (1) Salvatore Gambino (1) Francesco Guglielmino (1) Francesco Obrizzo (2) Rosanna Velardita (1)	(1) Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Catania Osservatorio Etneo (2) Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Napoli - Osservatorio Vesuviano	Alessandro Bonforte