

Tiziana Vanorio
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Stanford University
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EDUCATION:

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| 2009 | <i>Qualification aux Fonctions de Professeur des Universités</i> ,
French University Tenure System |
| 2008 | <i>Habilitation à diriger des recherches</i> (Certified to act as
Student Advisor), Université de Nice Sophia Antipolis
(France) |
| 1998 | Ph.D. Geophysics and Volcanology, University of Naples
Federico II (Italy) |
| 1992 | B.S. and M.S. (Honors) Geological Science, University of
Naples Federico II (Italy) |

PROFESSIONAL EXPERIENCE:

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| 2010 | Invited Professor, Center for Carbonate System and
Reservoir Geology, Université de Provence Aix Marseille
(France) |
| 2008–Present | Senior Research Scientist, Geophysics Department,
Stanford University |
| 2005–2008 | Research Associate, Geophysics Department, Stanford
University |
| 2002–2005 | CNRS Research Fellow, UMR Géosciences Azur,
Université de Nice Sophia Antipolis (France) |
| 1999–2001 | Post-doctoral Researcher, Geophysics Department,
Stanford University |

TEACHING AND MENTORING EXPERIENCE:

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| 2009 | Multimedia Tools for Rock Physics Laboratory Classes:
Laboratory Instruments through 3D Models and
Interactive Animations |
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- 2007–Present Developer and Instructor, GP162—Laboratory Methods in Geophysics, Stanford University
- 2007–Present Laboratory Instructor, GP262—Rock Physics, Stanford University
- 2007 Instructor, Short Course: How to Write a Scientific Paper, Stanford University
- 2004–2005 Introduction to Rock Physics, Lecturer in «Objets géologiques observés à terre et en mer », Université de Nice Sophia Antipolis (France)
- 2004 Introductory Course on Geothermal Energy (Undergraduate Level), University of Naples Federico II (Italy)
- 1997–1998 Teaching Assistant, Geophysical Prospecting, University of Naples Federico II (Italy)
- 1996–1997 Teaching Assistant, Applied Geophysics, University of Naples Federico II (Italy)
- 2005–Present Mentoring of 6 Ph.D. candidates and 2 post-doctoral researchers, Stanford University

UNIVERSITY SERVICE:

- 2009 Member, Space Committee
- 2007–2008 Member, Lab Consolidation Committee
- 2006-present Member, PhD Defense Committee
- 2006-present Member, Students' Qualification Exam Committee
- 2006-present Member, Students' Annual Review Committee
- 2006-Present Judge, School of Earth Science Research Review, Oral and Poster Presentations

INVITED PRESENTATIONS:

- 2011 Rock Physics Analysis and Time-Lapse Rock Imaging of Geochemical Effects Due to the Injection of CO₂ into Reservoir Rocks, 2011 SPE Saudi Arabia Section (SPE SAS)/Dhahran Geosciences Society (DGS) Annual Technical Symposium and Exhibition, AlKhobar, Saudi Arabia.

- 2011 The Rock Physicochemical Basis for Time-lapse Seismic Reservoir Monitoring of CO₂ Injection, SIAM Geosciences Mini-symposium Session on Carbon Sequestration, Long Beach, California.
- 2010 The Rock Physics Basis for 4D Seismic Monitoring of CO₂ for EOR and Sequestration, the Best of the SEG D&P Forum, 80th SEG Annual Meeting, Denver
- 2010 The Rock Physics Basis for 4D Seismic Monitoring of CO₂ Fate: Are We There Yet?, University of Texas at Austin, Jackson School of Geosciences
- 2010 Carbonate Microstructure, Transport and Acoustic Properties: Is there an order in all this disorder?, University of Texas at Austin, Jackson School of Geosciences
- 2009 How Physical and Chemical Mechanisms affect the Seismic Properties of Carbonate Rocks: Implication for 4D Seismic, Université de Provence Aix Marseille
- 2007 The Effect of Pore Shape and Chemical Processes on Gassmann's Predictability in Carbonate Rocks, Rock Physics – Special Interest Group, Houston
- 2005 Analyse des modeles 3D de vitesse par tomographie sismique et le lien avec la physique des roches pour l'inversion des proprietes physique des couches geologiques: application au systeme geothermal des Champs Phlegreens (Italie), IPGP, Paris, France
- 2004 Microearthquake Traveltimes and Rock Physics Characterization in the Campi Flegrei Caldera, EGU, Nice, France
- 2003 Tomografia sismica dei Campi Flegrei, University of Naples, Federico II, Italy

PROFESSIONAL ACTIVITES:

- 2010 Member, Review Panel, Science Center programs of the U.S. Department of State
- 2010 Member, SEG D&P Summer Forum Committee, "Are We Ready for Megatonne-Scale CO₂ Sequestration and EOR?" Boston

- 2009 Chair and Organizer, EAGE Workshop, “Carbonate Rock Physics: the Good, the Bad, and the Unknown”
- 2008 Convener, AGU Session, “Monitoring Techniques and Interpretation Methods for Coupled Thermo-Hydro-Mechanical Processes in the Earth Crust”
- 2008 Session Chair and Technical Committee Member, SEG Summer Research Workshop, “Emergent and Challenging Issues in Rock Physics: Rock This House!” Galway
- 2008–Present Member, Scientific Program Review Panel, Agence National de la Recherche, France
- 2007–Present Member, Scientific Program Review Panel, U.S. Department of Energy Program on Basic Research
- 2007 Member, Committee for the Best Student Award, AGU Fall Meeting, San Francisco
- 2005–Present Member, Scientific Program Review Panel, European Community, Marie Curie Program

AWARDED RESEARCH GRANTS:

The list of grants reported below refers to funded proposals for which I determined the intellectual direction of the research. Nevertheless, as per Stanford University rule, eligibility to act as a principal investigator (PI) or co-principal investigator (Co-PI) on externally funded projects is a privilege limited to members of the Academic Council. In August 2011 I have obtained a PI waiver.

Co-PI: 2011-2013 Measurement of the Transport and Elastic Properties and CT-scan Imaging of Carbonate Rocks while Monitoring Dissolution and Precipitation Processes, Petrobras *under negotiation*

PI: 2011-2012 4D and 3D Visualization of Experimental Procedures in Geophysics, European Community € 150,000

Co-I: 2010-2013 Linking Chemical and Physical Effects of CO₂ injection to Geophysical Parameters, GCEP share \$1,500,000

Co-I: 2009-2012 Advanced Technologies for Monitoring CO₂ Saturation and Pore Pressure in Geologic Formations, DOE share: \$1,177,957

Co-I: 2008-2010, An integrated methodology quantifying the links between rock physics- and geochemical- properties in organic-rich shales, American Chemical Society, \$ 100,000

Co-I: 2007-2009, Experimental Investigation of the Effect of Pressure and Fluid Saturation on Carbonate Rocks, American Chemical Society, \$ 90,000

PI- 2002-2005, Combining study of Rock Physics and 3-D seismic characterization of the Campi Flegrei hydrothermal system (Southern Italy), European Community, Marie Curie Grant, 97,000 €

FELLOWSHIPS, AWARDS AND HONORS:

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| 2010 | Best presentation at the SEG D&P Summer Forum, “Are We Ready for Megatonne-Scale CO ₂ Sequestration and EOR?” Boston, USA and invitation to present at the 80th SEG Annual Meeting, Denver |
| 2005 | European Science Foundation, EURY program, ranked among the top 5 outstanding young researchers in France |
| 2002–2005 | European Community, Marie Curie Fellowship |
| 2000 | Italian National Research Council, NATO Fellowship Program |
| 1999 | Italian National Research Council, Fellowship Program for research activity abroad |

PUBLICATIONS:

In preparation:

Vanorio T., Y. Ebert, and D. Grombacher, What Induced Dissolution Trends Tell us About Natural Diagenetic Trends of Carbonate Rocks, to be submitted to AAPG

Wolf K., **Vanorio T.**, High-Temperature and High-Pressure Ultrasonic Compressional and Shear Velocity of Bitumen Samples: Part 1 -- Equipment Design, to be submitted to Geophysics,

Wolf K., **Vanorio T.**, High-Temperature and High-Pressure Ultrasonic Compressional and Shear Velocity of Bitumen Samples: Part 2 – Experimental Results, to be submitted to Geophysics,

Vanorio T., C. Di Bonito, Handbook of Experimental Rock Physics, *A Multimedia Handbook --3D Virtual Instruments and Interactive Procedures*

Journals:

Under Revision **Vanorio T.**, Virieux J., Latorre D., Estimation of Rock Properties by Integrating Deterministic Rock Physics

- Models with P- and S- wave velocity Images from Micro-earthquake Tomography, submitted to GJI
- 2011 Grombacher D., **Vanorio T.**, Time-Lapse NMR, Acoustic, and Transport measurements monitoring dissolution trends of Carbonate Rocks, submitted to Geophysics; 2nd Review
- 2011 **Vanorio T.**, A. Nur, Y. Ebert, Rock Physics Analysis and Time-Lapse Imaging of Geochemical effects Due to the Injection of CO₂ into Reservoir Rocks: Geophysics **76**, 23-33. *Listed in the Brightspots of Geophysics*
- 2011 **Vanorio T.**, and Mavko G., The Effect of Microstructure on the Acoustic Properties of Carbonate Rocks: Geophysics **76**, 105-115
- 2011 Agersborg R., Johansen T. A., Mavko G., **Vanorio T.**, Modeling of elasticity effects of sandstones compaction using coated inclusions: Geophysics **76**, 69-79.
- 2010 Vialle S., and **Vanorio T.**, Linking the Acoustic Properties of Carbonate Rocks to Induced-Chemical Changes Upon Injection of CO₂-rich Water: Geophys. Res. Lett., **38**, L01302, doi:10.1029/2010GL045606.
- 2010a Gomez C. T., J. Dvorkin, and **T. Vanorio**, Laboratory measurements of porosity, permeability, resistivity and velocity for Fontainebleau sandstones, Geophysics , **75**, 191-204.
- 2010b **T. Vanorio**, G. Mavko, S. Vialle, and K Spratt, The Rock Physics Basis for 4D Seismic Monitoring of CO₂ Fate: Are we there Yet? The Leading Edge, Special Issue CO₂ Sequestration, February 2010.
- 2010c Mavko G. and **T. Vanorio**, The Influence of Pore Fluids and Frequency on Apparent Effective Stress Behavior of Seismic Velocities, Geophysics, **75**, N1
- 2010d L. Lutterotti, M. Voltolini, K. Bandyopadhyay, H. R. Wenk, **T. Vanorio**, 2010, Texture analysis of a turbostratically disordered Ca-montmorillonite", American Mineralogist, **95**, 98–103
- 2009a Dello Iacono D., Zollo A., Vassallo M., **Vanorio T.**, Judenherc S., Very high resolution imaging of the shallow structure of Campi Flegrei caldera, Bulletin of Volcanology, doi:10.1007/s00445-008-0222-1

- 2009b Ramil Ahmadov, **T. Vanorio**, and G. Mavko, Confocal laser scanning and atomic-force microscopy in estimation of elastic properties of the organic-rich Bazhenov Formation, *The Leading Edge* 28, 18.
- 2008a R. De Matteis, **T. Vanorio**, A. Zollo, S. Ciuffi, A. Fiordelisi, E. Spinelli, Three-dimensional tomography and rock properties of the Larderello-Travale geothermal area, Italy, *Physics of the Earth and Planetary Interiors*, doi:10.1016/j.pepi.2008.04.019
- 2008b **T. Vanorio**, C. Scotellaro, and G. Mavko, The Effect of Chemical Processes and Mineral Composition on the Acoustic Properties of Carbonate Rocks, *The Leading Edge*, Volume 27, Issue 8.
- 2008c Wolf K., **T. Vanorio**, and G. Mavko, Measuring and monitoring heavy-oil reservoir properties, *The Leading Edge* 27, 1138
- 2008d **T. Vanorio**, T. Mukerji, and G. Mavko, Emerging methodologies to characterize the rock physics properties of organic-rich shales, *Leading Edge*, Volume 27, Issue 6, 780-787.
- 2005 **Vanorio T.**, J. Virieux, P. Capuano, G. Russo, 3-D Seismic Tomography from P- and S- Microearthquake Traveltimes and Rock Physics Characterization in the Campi Flegrei Caldera, *J. Geophys. Res.*, 110, B03201, doi:10.1029/2004JB003102.D
- 2004a Latorre, J. Virieux, T. Monfret, V. Monteiller, **T. Vanorio**, J.-L. Got and H. Lyon-Caen. A new seismic tomography of Aigion area (Gulf of Corinth - Greece) from 1991 dataset, *Geophys. J. Int.* 159, 1013–1031 doi: 10.1111/j.1365-246X.2004.02412.x
- 2004b **T. Vanorio**, R. De Matteis, A. Zollo, Batini F., Fiordelisi A., Ciulli B., The deep structure of the Larderello-Travale Geothermal Field from 3D microearthquakes travelttime tomography, *Geophys. Res. Lett.*, 31 (7) L07613, 10.1029/2004GL019432
- 2003a **Vanorio T.**, De Matteis R., Zollo A., Fiordelisi A., Ciulli B., Three-dimensional seismic images of the Larderello-Travale geothermal area-Italy from microseismic travel time data, *Extended Abstract- Geothermal Resources Council 2003, Morelia Mexico*, 1-4

- 2003b **Vanorio T.**, Prasad M., Nur A., Elastic Properties of Clay Dry Mineral Aggregates, Suspension and Sandstones, *Geophys. J. Int.*, 155, 319-326
- 2002 **Vanorio T.**, Prasad M., Patella D. Nur A., Ultrasonic velocity measurements in volcanic rocks: correlation with microtexture, *Geophys. J. Int.*, 149, 22–36
- 1999 Carrara E., Mazzacca A., Pece R., Roberti N., **Vanorio T.**, Evaluation of Porosity and Saturation Degree by Laboratory Joint Measurements of Velocity and Resistivity: a Model Improvement, *Pageoph Vol. 154*, no. 2, 211-255.
- 1993 Carrara E., Fedi M., Roberti N., **Vanorio T.**, Misure elettriche e gravimetriche finalizzate alla ricostruzione del basamento carbonatico nel bacino carsico di Piano d'Ischia-M.te Terminio (Apennino Meridionale, Italy) Gruppo Nazionale di Geofisica della Terra Solida, 12, 722-726.

Articles in Books:

- 2010 Wolf K., **Vanorio T.**, Mavko G., Measuring and Monitoring Heavy-Oil Reservoir Properties, in *Heavy Oils*, SEG Book Publication, Editor S. Chopra *in press*
- 2006 P. Capuano, G. Russo, **T. Vanorio**, R. Prevete, E. Auger, M. Bonagura, G. Caielli, V. Convertito, N. Damiano, L. D'Auria, A. Emolo, L. Lovisa, M. Moretti, 1984 Campi Flegrei seismic waveforms compilation, in *Geophysical Exploration of the Campi Flegrei Caldera's Interiors : Data , Methods and Results*, Edited by Zollo A., Capuano P., Corciulo M., Gruppo Nazionale per la Vulcanologia, Roma. ISBN 10: 88-89972-04-1 ; 13: 978-88-89972-04-5
- 2006 **T. Vanorio**, J. Virieux, A. Zollo, P. Capuano, G. Russo, A Rock Physics and Seismic Tomography Study to Characterize the Structure of the Campi Flegrei Caldera, in *Geophysical Exploration of the Campi Flegrei Caldera's Interiors : Data , Methods and Results*, Edited by Zollo A., Capuano P., Corciulo M., Gruppo Nazionale per la Vulcanologia, Roma. ISBN 10: 88-89972-04-1 ; 13: 978-88-89972-04-5
- 2006 C. Satriano, A. Zollo, P. Capuano, G. Russo, **T. Vanorio**, G. Caielli, L. Lovisa, M. Moretti, A 3D velocity model for earthquake location in Campi Flegrei area: application to

- the 1982-84 uplift event, in Geophysical Exploration of the Campi Flegrei Caldera's Interiors : Data , Methods and Results, Edited by Zollo A., Capuano P., Corciulo M., Gruppo Nazionale per la Vulcanologia, Roma. ISBN 10: 88-89972-04-1 ; 13: 978-88-89972-04-5
- 2006 L. Lovisa, E. Priolo, A. Michelini, J. Virieux, G. Bohm, G. Rossi, F. Gentile, **T. Vanorio**, B. Monteiller, L. Got, S. Gautier, The Campi Flegrei Blind Test: Tomographic inversion, in Geophysical Exploration of the Campi Flegrei Caldera's Interiors : Data , Methods and Results, Edited by Zollo A., Capuano P., Corciulo M., Doppiavoce, Naples, Italy
- 2006 R. de Franco, R. Tondi, **T. Vanorio**, J. Virieux, Joint 3D Seismo-Gravity Inversion (theoretical development), in Geophysical Exploration of the Campi Flegrei Caldera's Interiors : Data , Methods and Results, Edited by Zollo A., Capuano P., Corciulo M., Gruppo Nazionale per la Vulcanologia, Roma. ISBN 10: 88-89972-04-1 ; 13: 978-88-89972-04-5
- 2006 G. Giberti, G. Russo, **T. Vanorio**, B. Yven, M. Zamora, Thermo-mechanical modeling of the Campi Flegrei volcanic area (Italy), in Geophysical Exploration of the Campi Flegrei Caldera's Interiors : Data , Methods and Results, Edited by Zollo A., Capuano P., Corciulo M., Gruppo Nazionale per la Vulcanologia, Roma. ISBN 10: 88-89972-04-1 ; 13: 978-88-89972-04-5
- 2006 S. de Lorenzo, A. Zollo, M. Trabace, **T. Vanorio**, Three dimensional QP and QS tomographic images of the Campi Flegrei caldera, in Geophysical Exploration of the Campi Flegrei Caldera's Interiors : Data , Methods and Results, Edited by Zollo A., Capuano P., Corciulo M., Gruppo Nazionale per la Vulcanologia, Roma. ISBN 10: 88-89972-04-1 ; 13: 978-88-89972-04-5
- 2003 **Vanorio T.**, Rock Physics properties of volcanic lithologies in the Campanian Plane, in The Internal Structure of Mt. Vesuvius: A Seismic Tomography Investigation, Editors Capuano P., Gasparini P., Zollo A., Virieux J., Casale, Yeroyanni, Liguori Editore, 553-580
- 2003 Saracco G., Ribodetti A., Turquetty S., F. Conil, **T. Vanorio**, 2.5D Viscoacoustic Diffraction Tomography: Application to Vesuvius Rock Samples, in 'The internal structure of Mt. Vesuvius: A Seismic Tomography

Investigation”, Editors Capuano P., Gasparini P., Zollo A., Virieux J., Casale, Yeroyanni, Liguori Editore, 283-294

Conference Proceedings and Published Abstracts:

- 2010 **Vanorio T.**, C. Di Bonito, 4D Visualization of Experimental Procedures in Rock Physics, Eos Trans. AGU, 91(52), Fall Meet. Suppl.
- 2009 S. Vialle, **T. Vanorio**, G. Mavko, Monitoring the Change of Acoustic Properties in Micritic Limestones upon Injection of CO₂ rich fluids, Extended Abstract, 80th SEG Annual Meeting
- 2009 S. Vialle, **T. Vanorio**, G. Mavko, and Y. Guglielmi, Monitoring the Change of Carbonate Rock Properties upon Injection of CO₂ rich fluids, Eos Trans. AGU, 90(52), Fall Meet. Suppl.
- 2009 D. Dralus, **T. Vanorio**, G. Mavko, Interactions Between Rocks and Pore Fluids and Their Effect on Rock Physics Parameters as Measured in CO₂-saturated Zeolites and Sandstones, , Eos Trans. AGU, 90(52), Fall Meet. Suppl.,
- 2009 **T. Vanorio** and Gary Mavko, How Micrite Content Affects the Transport, Seismic, and Reactive Properties of Carbonate Rocks. Implications for 4D Seismic, Extended Abstract, 79th SEG Annual Meeting.
- 2009 **T. Vanorio**, J. Dvorkin, G. Mavko, The Effect of Micrite Content on Porosity, Permeability, and Acoustic Velocity of Carbonate Rocks, EAGE Amsterdam Workshop (W11) entitled ‘Carbonate Rock Physics: the Good, the Bad, and the Unknown’.
- 2009 **T. Vanorio** and G. Mavko, Linking the Chemical and Physical Effects of CO₂ Injection to Geophysical Parameters, AAPG/SEG/SPE HEDBERG Conference, Vancouver, Canada
- 2008 **T. Vanorio**, Mukerji T., G. Mavko, Emerging methodologies to characterize the rock physics properties of organic-rich shales, Summer Research Workshop SEG, Galway, Ireland
- 2008 **T. Vanorio**, Scotellaro C., Mavko, Mineral composition, pore fluid and pressure effect on the elastic properties of carbonate rocks, Summer Research Workshop SEG, Galway, Ireland

- 2008 Bandyopadhyay, K., **Vanorio T.**, Mavko G., Wenk, R., Voltolini M., Elastic Anisotropy of Clay, Summer Research Workshop SEG, Galway, Ireland
- 2008 **Vanorio T.**, Mukerji T., Mavko C., "Elastic Anisotropy, Maturity, and Maceral Microstructure in Organic-Rich Shales" Extended Abstract, 78th SEG Annual Meeting
- 2008 Bandyopadhyay, K., **Vanorio T.**, Mavko G., Wenk, R., Voltolini M., Elastic Anisotropy of Clay, Extended Abstract, 78th SEG Annual Meeting
- 2007 **Vanorio T.**, Scotellaro C., Mavko C., 'To Fluid-Substitute or Not To Fluid-Substitute': the effect of pore shape and chemical Processes on Gassmann's Predictability in Carbonate Rocks, Extended Abstract, 77th SEG Annual Meeting
- 2007 Scotellaro C., **Vanorio T.**, Mavko G., The effect of Mineral Composition and Pressure on Carbonate Rocks, Extended Abstract, 77th SEG Annual Meeting.
- 2007 **T. Vanorio**, C. Scotellaro, G. Mavko, "To Fluid-Substitute or Not to Fluid-Substitute": how pore shape and chemical processes affect Gassmann's predictability, Extended Abstract RP.2, 77th SEG Annual Meeting, San Antonio, Texas
- 2006 **Vanorio T.**, and Mavko G., Vp/Vs ratio in gas-pressured saturated sandstones, Extended Abstract, 76th SEG Annual Intl. Meeting, PP1
- 2006 Scotellaro C., **T. Vanorio**, Mavko G., Experimental Investigation of the Effect of Pressure and Fluid Saturation on Carbonate Rocks, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract T23D-0538
- 2006 **T. Vanorio** and G. Mavko, Detecting Pore Fluid Pressure Changes by Using the Vp/Vs Ratio, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract S33A-0234
- 2006 Battaglia J., Zollo A., Virieux J., **Vanorio T.**, Merging Active and Passive Data Sets in Travel-Time Tomography: The Case Study of Campi Flegrei Caldera (Italy), Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract S51C-1282
- 2004 **Vanorio T.**, Virieux J., Latorre D., Beyond Delay Time Tomography: the Estimation of Rock Physics Properties

- from P- and S- velocity models, Eos Trans. AGU, 85(48), Fall Meet. Suppl., Abstract S23B-0323.
- 2004 **Vanorio T.**, J. Virieux, A. Zollo, P. Capuano, G. Russo, 3-D Seismic Tomography from P- and S- Microearthquake Traveltimes and Rock Physics Characterization in the Campi Flegrei Caldera, Nice 25-30 April, Abstract EGU04-A-02729 (invited)
- 2003 **Vanorio, T.**, Virieux J., Zollo A., Capuano P., Russo G., New Inferences on the Campi Flegrei Caldera Structure from microearthquakes P- and S- delay time tomography, Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract S52I-05.
- 2003 **Vanorio T.**, Zollo A., De Matteis R., Batini F., Fiordalisi A., Ciulli B., Three-dimensional seismic images of the Larderello-Travale geothermal area-Italy from microseismic travel time data, Geothermal, Resources Council's Annual Meeting, Morelia, Michoacan, Mexico, 12-15 October
- 2003 Latorre, D., Virieux J., Monfret T., Monteiller V., **Vanorio T.**, Got J.L., Lyon-Caen H., A New Tomographic Study of the Western Corinth Rift (Greece) Using Local Seismicity, Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract S51D-0080.
- 2003 Russo, G., **Vanorio, T.**, Capuano, P., Prevete, R., Zollo, A., Caielli, G., and Moretti, M., Campi Flegrei caldera seismic waveforms database, Annual GNV Meeting, Rome, June 9-11.
- 2003 **Vanorio T.**, Zollo A., De Matteis R., Ciulli B., Fiordalisi A., Advanced microseismic data inversion for 3D velocity image of Larderello-Travale geothermal system, "Structures in the continental crust and geothermal resources", Université de Siena, Italie 24-27 September
- 2003 **Vanorio T.**, De Matteis R., Ciulli B., Spinelli E., Fiordalisi A., Zollo A., 3D Tomographic Images of Larderello Geothermal System, Tuscany Italy. EGS Meeting, Nice, Abstract EAE03-A-08952
- 2002 De Matteis R., **Vanorio T.**, Ciulli B., Spinelli E., Fiordalisi A., Zollo A., Seismic Velocity Structures of Larderello Geothermal System, Italy: Preliminary Results, Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract S11C-1168.

- 2002 **Vanorio T.**, Giberti G., Prasad M., Nur A., Petrophysical Properties of Volcanic Samples: A Contribution to Interpret Ground Deformation in Campi Flegrei Volcanic Area, EGS Meeting, Nice, 21-26 Aril, Abstract EGS02-A_03685
- 2002 **Vanorio T.**, Prasad M., Nur A., Elastic Properties of Clay Minerals and clay suspensions, EGS Meeting, Nice, 21-26 Aril, Abstract EGS02-A_03844
- 2000 **Vanorio T.**, Prasad M., Nur A., Elastic Properties of Clay Minerals, Eos Trans. AGU, 82(47), Fall Meet. Suppl., Abstract T32E-0911.
- 2000 **Vanorio T.**, Prasad M., Patella D. Nur A., Estimate of Stress-Induced Pore Pressure and Related Ground Deformation in the Campi Flegrei Volcanic Area (Southern Italy) Based on Rock Physics Measurements, Eos Trans. AGU, 81(47), Fall Meet. Suppl., Abstract V51B-09.
- 1999 **Vanorio T.**, Prasad M., Patella D. Nur A., Velocity and microstructure of Etnean and Phlegrean Field samples, EOS Trans. AGU, 80(47), Fall Meet. Suppl. Abstract T51G-07
- 1996 Carrara E. Pece R., Roberti N., **Vanorio T.**, The application of r-V model for evaluation of porosity and saturation degree in test area of Velia (Salerno), International Congress on Environment/Climate, ICEC/96 UNESCO, Roma
- 1996 Carrara E., Mazzacca A., Roberti N., **Vanorio T.**, Effetti della saturazione di fluidi sulle proprietà elastiche dinamiche ed elettriche di rocce sedimentarie. VI Workshop di Geoelettromagnetismo S. Margherita Ligure (GE)
- 1995 Carrara E. Pece R., Roberti N., **Vanorio T.**, Porosity and Saturation degree of rocks evaluated by joint measurements of resistivities and seismic velocities, 1st Meeting Environmental and Engineering Geophysics, Torino, Italy

