

# Giampiero Iaffaldano

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## Personal information

Born in 1978. Italian citizen.

## Education

Ph.D. Geophysics (*magna cum laude*), Ludwig-Maximilians University of Munich – Germany, 2007.

M.S. Physics (*magna cum laude*), University of Rome "La Sapienza" – Italy, 2003.

## Employment

Reginald A. Daly Postdoctoral Fellow, Harvard University – U.S.A., 2008 – present

## Professional services and memberships

Ph.D. committee external-member at *Purdue University*.

Associate editor of *Annals of Geophysics*.

Session convener at the General Assembly of the *European Geosciences Union*.

Reviewer of research proposals submitted to the *National Science Foundation*.

Reviewer of scientific articles submitted to *Nature*, *Geology*, *Tectonophysics*, *Journal of Geophysical Research*.

Member of the *American Geophysical Union*.

## Awarded grants

**Vigoni Program** funded by DAAD, 2007–2008, Joint modeling of subduction zone dynamics using analog and computer models of the lithosphere.

**BaCaTec Program** funded by the Bavarian government, 2005–2006, Global coupled models of lithosphere and mantle dynamics.

## Publications

### Journal Articles

- M. Bücke, **G. Iaffaldano**, H.-P. Bunge, 2009. Efficient computation of accurate derivatives in a tectonic inverse problem. *In review*.
- G. Iaffaldano**, H.-P. Bunge, 2009. Relating rapid plate motion variations to plate boundary forces in global coupled models of the mantle/lithosphere system: effects of topography and friction. *Tectonophysics*, **474** (1-2), 393–404.
- G. Iaffaldano**, H.-P. Bunge, 2008. Strong plate coupling along the Nazca/South America convergent margin. *Geology*, **36** (6), 443–446.
- O. Heidbach, **G. Iaffaldano**, H.-P. Bunge, 2008. Topography growth drives stress rotations in the central Andes – observations and models. *Geophysical Research Letters*, **35**, L08301 (6 pages).
- G. Iaffaldano**, H.-P. Bunge, M. Buecker, 2007. Mountain belt growth inferred from histories of past plate convergence: A new tectonic inverse problem. *Earth and Planetary Science Letters*, **260** (3-4), 516–523.
- G. Iaffaldano**, H.-P. Bunge, T.H. Dixon, 2006. Feedback between mountain belt growth and plate convergence. *Geology*, **34** (10), 893–896.
- G. Iaffaldano**, M. Caputo, S. Martino, 2006. Experimental and theoretical memory diffusion of water in sand. *Hydrology and Earth System Sciences*, **10**, 93–100.

### Conference proceedings

- G. Iaffaldano**, 2009. Testing geophysical hypotheses with global models of the coupled mantle/lithosphere system, *International conference "From crust to core" at ICTP, Trieste–Italy* (invited talk).
- G. Iaffaldano**, H.-P. Bunge, 2009. Kinematic signature of India/Australia plates break-up, *EGU General Assembly, Vienna–Austria* (talk).
- G. Iaffaldano**, H.-P. Bunge, 2008. Curvature and seismicity along the Nazca/South America convergent margin, *GeoMod 2008, Florence–Italy* (poster).
- G. Iaffaldano**, H.-P. Bunge, 2008. Feedback between Andean growth and plate motions in the South Atlantic and South Pacific, *33<sup>rd</sup> International Geological Congress, Oslo–Norway* (invited talk).
- G. Iaffaldano**, H.-P. Bunge, 2008. A global coupled model of mantle convection/lithosphere dynamics, *33<sup>rd</sup> International Geological Congress, Oslo–Norway* (talk).
- G. Iaffaldano**, H.-P. Bunge, 2008. Strong plate coupling along the Nazca/South America convergent margin, *EGU General Assembly, Vienna–Austria* (poster).
- G. Iaffaldano**, H.-P. Bunge, 2007. Strong plate coupling along the Nazca/South America convergent margin, *AGU Fall Meeting, San Francisco–U.S.A.* (talk).
- G. Iaffaldano**, H.-P. Bunge, T. H. Dixon, M. Bücke, 2007. Feedback between Andean mountain belt growth and plate convergence: a climate-driven process?, *EGU General Assembly, Vienna–Austria* (talk).
- G. Iaffaldano**, H.-P. Bunge, T. H. Dixon, M. Bücke, 2006. Feedback between mountain belt growth and plate convergence revealed by forward and inverse tectonic models, *AGU Fall Meeting, San Francisco–U.S.A.* (talk).

- G. Iaffaldano**, H.-P. Bunge, 2006. The tectonic origin of gravity and bathymetry anomalies at convergent margins, *Geodetic Week 2006*, Munich–Germany (talk).
- G. Iaffaldano**, H.-P. Bunge, T. H. Dixon, 2006. Feedback between mountain belt growth and plate convergence, *EGU General Assembly*, Vienna–Austria (invited talk).
- G. Iaffaldano**, H.-P. Bunge, M. Bücke, 2005. An inverse model of lithosphere global dynamics, *AGU Fall Meeting*, San Francisco–U.S.A. (talk).
- G. Iaffaldano**, H.-P. Bunge, 2005. A global coupled model of the lithosphere and mantle dynamics, 4<sup>th</sup> "Deep Earth: Theory, Experiments and Observation" Research Conference – Lithosphere–Asthenosphere Interaction, Nice–France (poster).
- G. Iaffaldano**, H.-P. Bunge, 2005. Hypothesis-testing with a combined mantle convection/lithosphere dynamics code, *EGU General Assembly*, Vienna–Austria (invited talk).
- G. Iaffaldano**, H.-P. Bunge, 2005. A global coupled model of the lithosphere and mantle dynamics, *IPGP Graduate Students Meeting*, Paris–France (invited poster).
- G. Iaffaldano**, H.-P. Bunge, 2004. A global coupled model of the lithosphere and mantle dynamics, *AGU Fall Meeting*, San Francisco–U.S.A. (poster).
- G. Iaffaldano**, M. Caputo, G. Scarascia Mugnozza, 2003. Experimental and theoretical memory diffusion of water in sand, *AGU Fall Meeting*, San Francisco–U.S.A. (poster).
- G. Iaffaldano**, M. Caputo, G. Scarascia Mugnozza, 2003. Esperimenti e teoria con temoria sulla diffusione dell'acqua nella sabbia, 22<sup>nd</sup> GNGTS National Meeting, Rome–Italy (talk).

### Media coverage

- 07/2007 – Berge bremsen Kontinentaldrift, *Spektrum der Wissenschaft* (German-language edition of Scientific American).
- 06/2007 – Kontinentale Schwerstarbeit, *Bild der Wissenschaft*.

### Invited seminars

- Université du Québec a Montréal / McGill*, October 2009.
- Australian National University*, February 2009.
- Princeton University*, November 2008.
- Norwegian Geological Survey*, November 2008.
- Purdue University*, October 2008.
- Cardiff University*, September 2008.
- University of Rennes*, September 2008.
- Australian National University*, May 2008.
- University of Sydney*, April 2008.
- INGV–Bologna*, March 2008.

*University of Toronto, April 2007.*

*Stanford University, March 2007.*

*Harvard University, February 2007.*

*Institut de Physique du Globe de Paris, April 2006.*