

Curriculum Vitae

Isabella Velicogna

Assistant Professor

Department of Earth System Science – University of California Irvine

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Education

Sep 1995 – Jan 1999: Ph.D. in Applied Geophysics, Department of Naval Architecture, Ocean and Environmental Engineering (DINMA), University of Trieste, Trieste, Italy. Advisor: Prof. Iginio Marson. Thesis: ‘Inversion of geophysical data: coherence analysis of gravity and topography’.

Jul 1995: Degree in Physics at the University of Trieste, Trieste, Italy; thesis with a geophysics subject: ‘Morphology of the crust-mantle discontinuity from gravity, topography, and isostasy’, Supervisors Prof. Peter Suhadolc and Prof. Iginio Marson. Mark: 110/110.

Postgraduate Training

Jan 1999 – Dec 2000: Post-doctoral Research Associate, University of Colorado (Cooperative Institute for Research in Environmental Science; Dept of Physics), Boulder, CO.

Academic Positions

Sep 2007 – Present: Assistant Professor, Dept. of Earth System Science at the University of California Irvine.

Jun 2007 – Present : Faculty part-time, Senior Scientist, division 32 Jet Propulsion Laboratory, Pasadena, CA.

Jan 2006 – Jun 2007: Senior Scientist at the Jet Propulsion Laboratory, NASA, Pasadena, CA.

Jan 2006 – Present. *Adjunct Professor* of the Cooperative Institute for Research in Environmental Science, CIRES, University of Colorado, Boulder, Colorado.

Jul 2006 – Present. *Adjunct Professor* of the National Institute of Oceanography and Experimental Geophysics - OGS, Trieste Italy.

Jan 2001 – Sep 2007: Research Scientist, Cooperative Institute for Research in Environmental Science, and Dept of Physics, University of Colorado, Boulder, CO. .

Awards and Recognitions

- 2006 NASA Award for Outstanding Scientific Achievements.

Publications

Underlined authors are students and Post-Doctoral Fellows

Paper in Review

1. **Velicogna, I.**, Kishore P., E. Rignot, D. Menemenlis. Comparison of ice mass loss from GRACE, Reynolds sea surface temperature (SST) and ECCO2 deep ocean temperature in Greenland. Submitted *Ann. Glaciol.* 2011.
2. **Velicogna I.** and Wahr J., 'Status of time-variable gravity studies of ice sheet mass loss with GRACE'. Submitted *Geophys. Res. Lett.*, 2011. Frontier Article Requested by the Chief Editor, Eric Calais.
3. **Velicogna I.**, Tong J., Zhang T, Kimball J. 'Increasing groundwater storage in discontinuous permafrost areas in the Lena river basin, Eurasia, detected from GRACE'. Submitted *Geophys. Res. Lett.*, 2011.
4. Kishore P., **Velicogna I.**, Swenson S. 'Accuracy of atmospheric pressure fields in antarctica implication for GRACE derived products'. Submitted *Geophys. Res. Lett.*, 2011.

Peer Reviewed Papers

1. 2011 – Church J, White NJ, Konikow LF, Domingues CM, Cogley JG, Rignot E, Gregory J, van den Broeke M, Monaghan A., **Velicogna I.** 'Revisiting the Earth's sea-level and energy budgets from 1961 to 2008'. *Geophys. Res. Lett.*. Frontier Article Requested by the Chief Editor, Eric Calais.
2. 2011– Rignot E. **Velicogna, I.**, Van Den Broeke, M, Monaghan A. 'Acceleration of Greenland and Antarctic Melting from time variable ice motion and gravity data'. In revision *Nature Geoscience*, 2010.
3. 2011 – Kishore P., M. V. Ratnam, S. P. Namboothiri, **Velicogna I.**, Gouse Basha, J. H. Jiang, K. Igarashi, S. V. B. Rao, and V. Sivakumar. 'Global distribution of water vapor observed by COSMIC GPS RO: Comparison with GPS radiosonde, NCEP and JRA-25 re-analysis data sets'. In Press *Journal of Atmospheric and Solar-Terrestrial Physics*, 2011, doi:10.1016/j.jastp.2011.04.017.
4. 2010 – Tong J., **Velicogna, I.** 'A Comparison of AMSR-E/Aqua Snow Products with in-situ Observations and MODIS Snow Cover Products in the Mackenzie River Basin, Canada'. *Remote Sens.* 2010, 2(10), 2313-2322; doi:10.3390/rs2102313.
5. 2010 – Khan SA, Wahr J., Bevis B., **Velicogna I.**, Kendrick E. , "Greenland ice loss continues to accelerate", *Geophys. Res. Lett.*, doi: 10.1029/2010GL042460.
6. 2010 – Rignot, E., Koppes M., **Velicogna I.**, 'Rapid submarine melting of the calving faces of west Greenland glaciers', *Nature Geoscience*, doi: 10.1038/NGL0765.
7. 2010 – Tamisiea M., Hill W.M., Ponte R.M., Davis J.L. , **Velicogna I.**, 'Impact of self-attraction and loading on the annual cycle in sea level', *J. Geophys. Res.*, doi:10.1029/2010JB007530.
8. 2009 – van den Broeke M., Bamber J, Ettema J., Rignot E., Schrama E., van de Berg W., van Meijgaard E., **Velicogna I.**, Wouters B., 'Partitioning recent Greenland mass loss', *Science*, doi: 10.1126/science.1178176.
9. 2009 – **Velicogna, I.**, 'Increasing rates of ice mass loss from the Greenland and Antarctic ice sheets revealed by GRACE', *Geophys. Res. Lett.*, doi:10.1029/2009GL040222.
10. 2009 – Rodell, M, **Velicogna, I.**, Famiglietti J, 'Satellite-based estimates of groundwater depletion in India'. *Nature*, doi: 10.1038/nature08238, 2009.
11. 2006 – **Velicogna I.** and J. Wahr, Acceleration of Greenland Ice Mass Loss in Spring 2004, *Nature*, doi:10.1038/nature05168.
12. 2006 – **Velicogna I.** and J. Wahr, Time variable gravity shows a large mass loss in Antarctica, *Science* 10.1126/science11237855.
13. 2005 – Wahr J. , Swenson S, **Velicogna, I.**, The Accuracy of GRACE Mass Estimates, *Geophys. Res. Lett.*, doi: 10.1029/2005GL0253052005.

14. 2005 – **Velicogna I.** and J. Wahr, Ice Mass Balance in Greenland from GRACE, *Geophys. Res. Lett.*, doi:10.1029/2005GL023955.
15. 2004– **Velicogna I.**, J. Wahr, E. Hanna, P. Huybrechts, Short term mass variability in Greenland, from GRACE, *Geophys. Res. Lett.*, doi:10.1029/2004GL021948.
16. 2004– Wahr J., Swenson S., Zlotnicki, **Velicogna I.**, Time-Variable Gravity from GRACE: First Results, *Geophys. Res. Lett.*, doi:10.1029/2004GL019779.
17. 2004– Perez-Gussinye M., A.R. Lowry, A.B. Watts, and **Velicogna I.**, On the recovery of realistic effective elastic thickness structures using spectral methods, *J. Geophys. Res.*, doi:10.1029/2003JB002788.
18. 2003– **Velicogna I.** and J. Wahr, 'Geodesy and the problem of the ice sheet', *Proceedings, V Hotine-Marussi Symposium on Mathematical Geodesy*.
19. 2003– Wahr J. and **Velicogna I.**, 'What might GRACE contribute to studies of post glacial rebound?'. *Space Sci. Rev.* 108 (1-2): 319-330.
20. 2002– **Velicogna I.** and J. Wahr, 'Post Glacial rebound and Earth's Viscosity Structure From GRACE'. *J. Geophys. Res.*, doi:10.1029/2001JB001735.
21. 2002– **Velicogna, I.** and J. Wahr, 'A method for separating Antarctic postglacial rebound and ice mass balance using future ICESat Geoscience Laser Altimeter System, Gravity Recovery and Climate Experiment, and GPS satellite data'. *J. Geophys. Res.* , doi: 10.1029/2001JB000708.
22. 2001– **Velicogna I.**, J. Wahr and H. Van den Dool, ' Can surface pressure be used to remove atmospheric contributions from GRACE data with sufficient accuracy to recover the desired hydrological signals?'. *J. Geophys. Res.*, Vol. 106, 16,415-16,434. , 2001.
23. 2000– Coren, F., P. Sterzai, R. Vidmar, and **I. Velicogna**, 'Buildings and industrial sites monitoring using SAR interferometry - The TS-SAR project', *Proceedings of the IV National Meeting ASITA (Scientific Association for Territorial and Environmental Information)*, 617-622.
24. 1999– Accaino, F., R. Cazzaro, L. Cernobori, G. Costa, B. Della Vedova, S. Kravania, I. Marson, R. Nicolich, G.F. Panza, P. Suhadolc, A. Sarao', G. Pellis, F. Romanelli, F. Vaccari, and **I. Velicogna**, Structure and physical properties of the tectosphere in the metastable Europe, *Plinius*, 650-667.
25. 1998– Marson, I., R. Nicolich, L. Cernobori, M. Stoka, D. Liotta, F. Palmieri, and **I. Velicogna**, CROP-03 profile: a geophysical analysis of data and results, *Mem. Soc. Geol. Ital.* 52, 123-137.
26. 1997– Marson, I., M. Stoka, **I. Velicogna**, F. Coren, and C. Zanolla, Gravity, geoid, isostasy and moho depth in Ross Sea Antarctica, *IAG Symposia Vol 117, 'Gravity, Geoid and Marine Geodesy'*, Segawa et al. (eds.), Springer Verlag Berlin Heidelberg, 351-359.
27. 1997– Cerutti, G., P. De Maria, S. Desogus, F. Mazzoleni, I. Marson, and **I. Velicogna**, Absolute gravimetry in the Central European Initiative: The Italian contribution, *Proceedings of EGS Symposium G14, Warsaw University of Technology, No 3 (26)*, 105-111.
28. 1997– Marson, I., M. Stoka, **I. Velicogna**, F. Coren, and C. Zanolla, Trend Analysis in the Ross Sea, Antarctica, *Atti del 15th Convegno GNGTS, CNR. Roma*, 127-132.
29. 1997– Foti, A., Pinna E., **Velicogna I.**, Isostatic moho and upper mantle structure in North-Central Italy from gravity analysis, *Atti 15th Convegno GNGTS, CNR. Roma*, 483-489.
30. 1996–**Velicogna, I.**, I. Marson, and P. Suhadolc, 'Moho morphology from gravity, topography and isostasy', *Atti del 14th Convegno GNGTS, CNR. Roma*, 405-418.

Book Chapters

- 2007– Bentley, C., R. Thomas, **Velicogna, I.**, "Ice sheets" in Global Outlook for Ice and Snow ISBN: 9789280727999 United Nations Environment Programme Publication.

Grants and Contracts**Current Funding PI:**

- *NASA ROSES-07 Hydrology Program*. 'Terrestrial water storage changes and boreal drought under a warming climate: Investigation with multi-sensor satellite observations, in-situ data, and hydro-ecological process modeling'. \$600,506. Dates: 06/09-05/13 P.I.: Isabella Velicogna. Co-P.I.: Kyle McDonald and John Kimball.
- *NASA ROSES-07 Cryosphere Program*. 'Interpretation and uncertainties in ice sheet mass balance and seasonal variability from GRACE data'. \$457,904 Dates: 06/08-05/12. P.I.: Isabella Velicogna. Co-P.I.: Mike Watkins.
- *NASA NRA-NNH04ZYS005N Hydrology Program*, 'The Eurasian Fresh water cycle From GRACE and in-situ hydrologic networks: distinguishing water behavior in permafrost and non-permafrost regions'. P.I.: Isabella Velicogna, Co-P.I.: Larry Smith (UCLA). Dates: 10/08-9/12 \$271,328

Current Funding Co-PI:

- *NASA ROSES-09 InterDisciplinary Science (IDS)-Program*, 'Regional pattern of sea level change from the melting of the Greenland, Antarctic and Patagonia ice sheets derived from combined InSAR ice motion, reconstructed surface mass balance and GRACE time-variable gravity', PI: Eric Rignot, Co-P.I. Isabella Velicogna, John Wahr. Dates: 08/10-07/13. \$1,247,524.
- *NASA-NNH08ZDA001N Modeling, Analysis and Prediction (MAP) Program*, 'A three-dimensional, high-resolution flow model of the Greenland ice sheet: validation and prediction'. P.I. Eric Rignot, Co-P.I. Isabella Velicogna, Eric Larour. Dates: 01/09-12/12. \$962,000.
- *NASA-Hydrology Program*, 'Mass Changes in Earth's Global Water Reservoirs'. PI: J. Famiglietti, Dates: 09/07-09/12, Co-P.I.: Don Chamber, Steve Nerem, Isabella Velicogna.
- *NASA ROSES-06 Solid Earth Program* Geophysical Applications of GRACE Dates: 07/07-10/11 P.I.: John Wahr, Co-P.I.: Isabella Velicogna. \$767,965
- *NASA ROSES-05 Cryosphere Program*, 'Mass Balance of the Polar ice Sheets'. P.I.: John Wahr (CU), Co-P.I.: Isabella Velicogna. Dates: 09/07-09/11 \$304,517.

Pending, PI:

- *NASA-Recompetition of the GRACE Science Team*. 'Improving the accuracy of GRACE long term and interannual estimates of regional ice sheet mass balance'. Dates: 2011-2015. P.I.: Isabella Velicogna, \$513

Pending, Co-PI:

- *NASA-GNSS Remote Sensing Science Team ROSES 11*, 'Accurate Meteorology Over Antarctica Based on GPS RO Profiles for GRACE Mass Balance Determination'. Dates: 10/2011-09/2014. P.I. David Bromwich, OSU. Co-PI Isabella Velicogna, \$607K

Previous Funding PI:

- *NSF-OPP*, 'Collaborative Research : Calculation of Antarctic gravity field from GRACE Satellite data and comparison with independent measurements'. PI.: Isabella Velicogna. Co-PI Garry Karner (LDEO-Columbia University), Robin Bell (LDEO-Columbia University) Dates: 2004-2008, \$455,00
- *NASA SENH Research and Applications Program*, 'Geopotential Heights for GRACE De-Aliasing: Comparison of SAC-C, CHAMP and GRACE Occultation Data with Global Circulation Models'. , P.I.: Isabella Velicogna Co-P.I.: George Hajj (JPL). Dates: 2004-2008 \$244,983
- *NASA-Cryospheric Sciences Program* 'Snow Accumulation in Greenland from GRACE Measurements of Time Variable Gravity'. , P.I.: Isabella Velicogna. Dates: 2005-2007
- *Jet Propulsion Laboratory - Pasadena - CA*: 'Validation of GRACE gravity satellite mission'. P.I.: Isabella Velicogna. Dates: 2000-2002.

Previous Funding Co-PI:

- *NASA-NRA-NN-H-04-Z-YS-005-N-Hydrology Program*, 'A Study of the First Global Measurements of the Water Cycle', P.I.: Jay Famiglietti (UCI), Co-P.I.: Isabella Velicogna (CU), Steve Nerem (CU), Don Chambers (CSR-UT) Dates: 2006-2009. \$600,000.
- *NASA SENH Research and Applications Program*, 'Hydrologic and Oceanographic applications of GRACE measurements of time variable gravity', P.I.: John Wahr (CU). Co-P.I.: Isabella Velicogna. Dates: 2004-2007. \$432,000.
- *NASA SENH Research and Applications Program*, 'Analysis and applications of GOCE and other future gravity mission concepts', P.I.: Mike Watkins (JPL). Co-P.I.: Isabella Velicogna. Dates: 2004-2007. \$225,000.
- *NSF International - Africa, Near East, and South Asia: 'Monitoring Large-Scale Water Storage Variability in Egypt'*, P.I.: John Wahr (CU). Co-P.I.: Isabella Velicogna. \$50,000.
- *'U.S.-Egypt Joint Science & Technology Fund'*, Water storage, atmospheric pressure, and the GRACE gravity satellite', P.I.: John Wahr (CU). Co-P.I.: Isabella Velicogna. \$30,000.
- *NASA Oceanography/NSIPP/Ice Sheets*, 'Mass Imbalance in Antarctica and Greenland', P.I.: John Wahr (CU). Co-P.I.: Isabella Velicogna. \$350,363.
- *Italian Regional Funds (region: Friuli-Venezia Giulia): "Reconstruction of the Historic Secular Series of Meteorological Data Observed in Trieste and Udine: Analysis of the Characteristics of the Regional Climate, and Fluctuations and Behavior in the Global Context"*. 2002. Data Grant.
- *Italian Ministry of University and of Scientific and Technologic Research (MURST) 40% and 60% funds: 'Flexural and Local Isostasy in Italy'*. 1998.

Professional Activities and International Committee Membership

- Editor of *Geophysical Journal International*. 2006- Present.
- June 2011 National Academy of Science Workshop to produce a report on Legacies and Lessons of International Polar Year 2007-2008 invitation only.
- June 2011. Invited keynote speaker at the *IPCC AR5 Workshop on Sea Level Rise and Ice Sheet Instabilities, Working Group 1*. Invitation only meeting.
- 2006-2008. Chair of the *AGU Hydrology Remote Sensing Committee*.
- 2005-2006. Chair, *American Geophysical Union (AGU) Geodesy Program*
- 2005-present. Member of the *AGU Geodesy Committee*.
- Session convener and Organizer: European Geophysical Society, (EGS 2002, 2003; EGU 2004, 2005, 2006, 2007) — American Geophysical Union (AGU 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009) — IUGG (2007)
- Member of the *GRACE science team* to map the Earth's static and time variable gravity field, (2002-Present).
- Member of the *Northern Eurasia Earth Science Partnership Initiative (NEESPI) science team*, (2004-Present).
- Member of the *NASA Energy and Water Cycle Study (NEWS) Science Team*, (2004-Present). ;
- Member of the *NASA Land Cover Land Use Change science team*, (2004-Present).
- Ad hoc Referee for *J. Geophys. Res.*, *Geophys. Res. Lett.*, *Geophys. J. Int.*, *J. of Hydrology*, *Earth Planet. Sci. Lett.*, *Earth, Planets and Space*, *J. of Geodesy*, *Planets and Space*, *J. of Geodesy*, *J. of Glaciology*, *J. of Climate*.

- Reviewer for *NASA, NSF, ESA, NOAA, Netherlands Organisation for Scientific Research, The Secretariat of the Top-level Research Initiative, Norway* proposals, (2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010).
- Member of NASA and NSF proposal review panels (2007, 2008, 2009).

Invited Presentations at Educational and Governmental Institutions

2011

- Invited speaker at the National Academies Workshop on the Legacy and Lessons of International Polar Year 2007-2008. June 15-16, 2011, Washington D.C.

2010

- Keynote speaker at the IPCC AR5 WG1 Workshop on Sea Level Rise and Ice Sheet Instabilities. 'Satellite-based Observations of Sea Level Rise from Large Ice Sheets', Malaysia, June 2010.
- Invited speaker, Soil and Water Sciences Seminar Dept. of Environmental Sciences, UC Riverside, CA.

2009

- Invited speaker, Nuuk Climate Days, International Glaciological Society (IGS) Conference, July 2009.
- Invited speaker, Joint DynaQlim/GGOS Workshop, June 2009, Espoo, Finland.

2008

- Invited keynote speaker at the Japanese-American Kavli Frontiers of Science Symposium - National Academy of Sciences symposium.
- Seminar series, Dept. of Physics, University of Udine, Udine, Italy.
- Environmental program on Global Change and Oceans organized by the Newkirk Center.
- Whole Earth Seminar Spring, Dept. of Earth & Planetary Sciences University of California Santa Cruz, California.

2007

- Institute of Geophysics and Planetary Physics (IGPP), UCLA, California.
- National Institute of Geophysics and Volcanology, Bologna, Italy.
- Heiland Lecture Series. Department of Geophysics, Colorado school of Mines.
- Seminar series, Dept. of Geophysics, Colorado school of Mines.
- Jet Propulsion Laboratory-NASA, Division Seminar.

2006

- Department of Geophysics, Stanford University.
- Department of Earth Sciences. University of Southern California.
- Earth and Environmental Science Dept., New Mexico Tech.

Before 2006

2005 – Department of Geography, UCLA; – Dept of Physics, New Mexico State University.

2004 – Jet Propulsion Laboratory (JPL)-NASA; – Invited lecturship *at the Vening Meinesz Research School of Geodynamics in the Netherlands*, Utrecht University.

- 2003** – International Center for Science and High Technology, United Nation Industrial Development Organization (UNIDO); – University of Munich, Austria; – National Center for Atmospheric Research, Boulder; – National Institute of Oceanography and Experimental Geophysics, Trieste, Italy; – Program in Atmospheric and Oceanic Sciences (PAOS), University of Colorado.
- 2002** – Institut de Physique du Globe de Paris, (IPGP), France; – Dept. of Physics University of Toronto, Canada; – Institute of Geophysics, Austin TX.; – Department of Civil and Environmental Engineering, Princeton University ; – Dept of Geomatics University of Calgary, Canada; – Jet Propulsion Laboratory (JPL)-NASA ;
- 2001** – University of Udine, Italy.
- 1998** – Lamont-Doherty Earth Observatory, Columbia University; – Dept. of Geophysics, Massachusetts Institute of Technology (MIT); – Dept of Geological Science, University of Utah; – Dept of Geological Science, Indiana University.

Conference Abstracts (Last Five Years)

Only those presented and first authored by Isabella Velicogna (this list does not include any of the Students and Post-doctoral Fellows presentations).

- Velicogna, I.**, Eric Rignot, van den Broeke. 'Acceleration and spatial patterns in Greenland and Antarctica ice mass loss from GRACE' Polar Science Conference, Oslo Norway, Jun 2010.
- Velicogna, I.**, Eric Rignot, Above-linear increase in Greenland and Antarctica ice mass loss Eos Trans. AGU, Fall Meet. Suppl., Dec 2009.
- Velicogna, I.**, Eric Rignot, Increase in Greenland ice mass loss from GRACE, Nuuk Climate Days Invited Greenland, Aug 2009
- Velicogna, I.**, E. Ivins, E. Rignot, Improving GIA using multiple remote sensing data. Joint DynaQlim/GGOS workshop Espoo, Finland, Jun 2009
- Velicogna, I.**, E. Ivins, E. Rignot, "Constraining accumulation and postglacial rebound combining GRACE and InSAR", *SCAR/IASC IPY*, Russia, Jul 2008.
- Velicogna, I.**, E. Rignot, 'Antarctic mass balance Constraining from GRACE and InSAR', 5th International Workshop on Antarctic peninsula Climate Change, Irvine Jun 2008.
- Velicogna I.**, "Ice and Sea Level Rise", *Environmental program on Global Change and Oceans*, Irvine May 2008.
- Velicogna, I.**, Rignot, Wahr J. Recent results from GRACE in Antarctica and Greenland: comparison with InSAR mass balance estimates, Program for Regional Climate Assessment (PARCA) Meeting, Boulder feb 2008
- Velicogna, I.**, J. Wahr, E. Rignot, 'Recent results from GRACE in Antarctica and Greenland: comparison with InSAR mass balance estimates' Eos Trans. AGU, 88(52), Fall Meet. Suppl., Abstract G33C-0006, Dec 2007.
- Velicogna, I.**, 'Recent results from GRACE in Antarctica and Greenland' International GSTM + DFG - SPP Symposium, October, 15 - 17, 2007 at GeoForschungsZentrum in Potsdam, Germany
- Velicogna, I.**, 'Ice mass variation from GRACE and ICESat. ICESat Science Team Meeting, La Jolla, Oct 2007.
- Velicogna, I.** and Wahr J. 'Seasonal and long term ice mass variations from GRACE', IUGG, Perugia Italy, Jul 2007.
- Velicogna, I.** and Wahr J., 'Time variable gravity From GRACE provides new and independent measurements of long term and seasonal mass variations of the ice sheets', EGU 2007.

Velicogna, I., Program for Regional Climate Assessment (PARCA) Meeting, Pasadena, Mar 2007

Velicogna, I., Wahr, J. 'Mass Changes in Earth's Global Water Reservoirs from GRACE', *EOS Trans. AGU*, 2006.

Velicogna, I., Wahr J., 'Time variable gravity from GRACE provides new and independent measurements of long term and seasonal mass variations of the ice sheets', *EOS Trans. AGU*, 2006.

Velicogna, I., John Wahr, 'Monitoring the mass variations of ice sheets from Gravity'. *International Symposium on Cryospheric indicators of global climate change, IGS*, Cambridge, 2006.

Velicogna, I., John Wahr, GRACE measurements show large ice mass loss in Antarctica and Greenland *EGU* 2006.

Velicogna, I., John Wahr Are the Ice sheets Losing Mass?, *EOS Trans. AGU*, 2005.

Velicogna, I., John Wahr, 'Ice Mass Balance in Greenland and Antarctica', *EGU*, 2005.

Teaching

– *ESS 15 Introduction to Global Climate Change*, spring 2010-2011 UCI

– *ESS 236 Advanced Remote Sensing*, spring 2008 UCI

– *ESS 116 Data Analysis*, Fall 2008, 2009, 2010, 2011 UCI.

– *ESS 199 Research for Undergraduate*, lecture on 'Remote Sensing Research', Fall 2007 UCI.

– *ESS 199 Research for Undergraduate*, lecture on 'Remote Sensing Research', Fall 2008 UCI.

– *Geophysical Geodesy* at the Vening Meinesz Research School of Geodynamics in the Netherlands, Utrecht University. 2004

– *Applied Geophysics*, an upper-level undergraduate course (University of Trieste) 1998.

– *Fundamental Mathematics and Physics*, an undergraduate course (University of Trieste) 1998

Post-Doctoral Fellow and Research Scientist Supervised

P. Kishore, ESS, UCI, 2008-ongoing

Tong Jinjun, ESS, UCI, 2009-ongoing

Graduate Students Supervised

Chia-Wei Hsu, ESS, UCI, Fall 2011.

Tyler Sutterley, ESS, UCI, Fall 2010.

George Azzari, ESS, UCI, 2009-2010.

Rachel Resolarczyk, ESS, UCI, 2008-2009.

Nicola Creati, Univ. of Chieti, Italy, PhD in 2003.

Adrienne Smith, LDEO, Columbia University, USA 2006-2008.

Undergraduate Students Supervised

Josue Alfaro, UCI, 2008-2009 (UCI - Honor Thesis advisor)

Catherine Hatch, Utah State University, 2007.

Research Interests

Use of space-based climate measurements for cryospheric and high latitude regional studies. Study of processes of global change using various remote sensing techniques, as well as lithospheric properties and loading processes on geological timescales. Particularly use of satellite measurements of static and time variable gravity to examine groundwater hydrology, polar ice mass balance, viscoelastic rebound and earth rheology.

Observing and monitoring changes of ice sheets mass balance and high latitude regions in a warming climate and determining the impact on global and regional sea level, using a combination of satellite remote sensing techniques, ground observations and numerical modeling.

Development of methods for joint estimation of, or inversion for, different components of the water cycle including its atmospheric and cryospheric components.

Field Experience

- Measurements of current, salinity and temperature profile in tide water glacier in Greenland (Greenland Summer 2008).
- Precision gravity measurements (Italy, 1997-1998)
- GPS campaign survey (Wabash Valley, midcontinent U.S., 1998)

Professional Memberships

- *American Geophysical Union*; • *European Geophysical Union*; • *International Glaciological Society (IGS)*

Student Theses: Member of Committee

- 2010 - Karli Anderson- ESS, UCI
- 2009 - JT Reager - ESS, UCI
- 2009 - Tsou Chun - Department of Civil and Environmental Engineering, UCI
- 2009 - Jingjing Li - Department of Civil and Environmental Engineering, UCI
- 2009 -Rebeka Sultana- Department of Civil and Environmental Engineering, UCI

Community Service and Education Outreach

- 2011 - Interview w. Richard Kerr, Science Magazine on Ice Sheet Mass Balance.
- 2011 - Interviews with press and medias on Geophys. Res. Lett. article on ice sheet mass balance, Feb. 2011.
- 2010 - Scientific committee for the exhibit "Poles in Peril" of the the Aquarium of the Pacific, Long Beach, CA.
- 2008 - Participed in the Documentary on GRACE satellite mission for the American Museum of Natural History, New York, NY.

Recent Collaborations

Chi Ao (JPL), Jason Box (Ohio State) , Erik Ivins (JPL), John Kimball (UNM), Jay Famiglietti (UCI), Alessandra Giannini (IRI, Columbia University), Kyle McDonald (JPL), Andrew Monaghan (NCAR), Eric Rignot (UCI/JPL), Matthew Rodell (GSFC), Koni Steffen (CU), Sean Swenson (NCAR), Marc Tamisiea (Proudman Oceanographic Laboratory, UK), Huug van den Dool (CPC, NOAA), Michiel van den Broeke (Utrecht University, NL), John Wahr (CU), Michael Watkins (JPL), Tingjun Zhang (NSIDC),