

Address: 410 Space Sciences Bld., Cornell University, Ithaca, NY 14853
Tel.: +1 607-255-1853
E-mail: valerio.poggiali@uniroma1.it
Date/Place of birth: 1 August 1983, Genoa, Italy



Valerio Poggiali

PhD in Radar and Remote Sensing, University of Rome "La Sapienza" 2014-2016

Research Associate, Cornell University

Associate member of the Cassini RADAR Science Team

Currently, my studies concern: application of super-resolution algorithms for improving radar altimeters performances; Cassini RADAR data analysis for direct detection of liquid-filled canyons on Titan and characterization of their geomorphologic context; estimation of Titan's surface and seafloor dielectric and geometric parameters by means of Bayesian estimation approaches based on Monte-Carlo simulations.

Work Experience

Nov. 2016-Today	Cornell University – Department of Astronomy	Ithaca (NY)
	<ul style="list-style-type: none">• Application of super-resolution algorithms in radar altimetry.• Support designing of a new radar altimeter for planetary exploration.	
Apr.2011-Oct.2016	"La Sapienza" Univ. of Rome – Department of Electronics and Telecomm. Engineering (DIET)	Rome
	<ul style="list-style-type: none">• Development and implementation of radar echo simulators;• Implementation of trackers for radar altimetry;• Study of Titan's liquid bodies and dunes fields by means of Cassini RADAR altimeter data analysis;• Presentations held at several international conferences hosted by NASA-JPL, ASI, SPIE, EGU, AGU.	
2011	Stage in Ericsson	Milan
	<ul style="list-style-type: none">• Mobile Networks design: radio frequencies design and microwave provisioning.	

Education and training

2014-2016	"La Sapienza" University of Rome	Rome
	<ul style="list-style-type: none">• PhD "cum laude" in Information and Communications Technologies - Radar and Remote Sensing The curriculum in Radar and Remote Sensing aims at educating researchers and applied scientists towards the development of innovative methodologies for the design of both active and passive remote sensing sensors and the processing of the information collected by such sensors, with specific reference to Earth observation and monitoring of environment and human activities, as well as to planetary exploration. Thesis title: Observations of Titan Liquid Bodies by means of the Cassini RADAR Altimeter. Supervisors: Dr. R. Seu and Dr. M. Mastrogiuseppe• During my PhD I have also led seminars on the radar altimeter of the Cassini mission and its discoveries.• 4th ESA Advanced Training course on Ocean Remote Sensing in Brest, France (2015)	
2008-2011	" La Sapienza" University of Rome	Rome
	<ul style="list-style-type: none">• Master of Science in Telecommunications Engineering with aerospace specialization: Satellite communication systems, Satellite navigation, Remote sensing systems, Space-based radar systems, Antennas, Electrical systems for space, Air traffic control, Image processing.• 3rd ESA Advanced Training course on Land Remote Sensing in Krakow, Poland (2011)	

Skills, competences and publications

Computer skills:

Matlab	Excellent	POLSARPRO	course provided by ESA
ArcGis	ECDL Professional Certification	SCOS2000	workshop provided by ESA
SNAP	course provided by ESA	C	Academic
ENVI 4.5	course provided by ESA	SQL	Academic
BEAM v4.8	course provided by ESA	Java	Academic

Social skills:

- I developed my group-working experience in the University of Rome within an active team of researchers pursuing several topics in radar science, starting from the successful design of radar sounders orbiting around Mars to the design of radars for the future exploration of the solar system.

Professional Memberships:

- Member of the American Geophysical Union (AGU).
- Engineer registered to the Albo dell'Ordine degli Ingegneri della Provincia di Roma with the n A32990.

Publications:

Articles:

- "Liquid-Filled Canyons On Titan", Poggiali V., Mastrogiuseppe M., Hayes A., Birch S., Seu R., Lorenz R., Grima C., Hofgartner J., *Geophysical Research Letters* 43(15):7887 · August 2016.
- "Radar Sounding Using Cassini Altimeter: Waveform Modeling and Monte Carlo approach for Data Inversion of Observations of Titan Liquid Bodies", Mastrogiuseppe M., Poggiali V. et al., *IEEE Transactions on Geoscience and Remote Sensing*, vol.PP, no.99, pp.1-11, 11 July 11 2016.
- "Constraining the physical properties of Titan's empty lake basins using nadir and off-nadir Cassini RADAR backscatter", Michaelides R.J., Poggiali V. et al., *Icarus*, Volume 270, Pages 57-66, 2016.
- "The bathymetry of a Titan sea ", Mastrogiuseppe, M., Poggiali, V., et al., *Geophys. Res. Lett.*, 41, 1432–1437, 2014.
- "Titan dune heights retrieval by using Cassini Radar Altimeter ", Mastrogiuseppe M., Poggiali V., et al., *Icarus*, Vol. 230, 191–197, 2014.
- "Dune Height Estimation on Titan Exploiting Pairs of Synthetic Aperture Radar Images With Different Observation Angles", Callegari M., Poggiali V. et al., *Ieee Journal Of Selected Topics In Applied Earth Observations And Remote Sensing*, Vol. 8, Issue 3, 2014.
- "Bathymetry and Composition of Titan's Ontario Lacus derived from Monte Carlo-based waveform inversion of Cassini RADAR altimetry data", Mastrogiuseppe M., Poggiali V. et al., submitted to *Icarus*.

Conferences:

Conference proceedings:

- "Synergy of Cassini SAR and altimeter acquisitions for the retrieval of dune field characteristics on Titan", V. Poggiali, M. Mastrogiuseppe, M. Callegari, R. Martufi, R. Seu, D. Casarano, L. Pasolli, C. Notarnicola, *Proceedings SPIE 8536, SAR Image Analysis, Modeling, and Techniques XII, SPIE Remote Sensing Conference, Edinburgh (UK)*, 21 November 2012.
- "Advanced Processing of Altimetry Cassini Radar Data", Mastrogiuseppe M., Poggiali V., Seu R., Picardi G., *IEEE Xplore - 3rd Microwaves, Radar and Remote Sensing Symposium (MRRS- 2011) Proceedings, Kiev, Ukraine, Aug. 25-27, 2011.*

Congress communications:

- "Delay-Doppler processing of the Cassini RADAR altimeter: Super-resolution techniques", 48th Lunar and Planetary Science Conference, The Woodlands, Texas, 21 March 2017.
- "Liquid-Filled Canyons On Titan", Poggiali et al., *EGU General Assembly, Wien (AU)*, Poster awarded with the Outstanding Student Poster (OSP) Award and publication, 20 May 2016.
- "The Bathymetry and Composition of Titan's Lakes and Seas", Hayes, A. G., Poggiali, V. et al., 47th Lunar and Planetary Science Conference, held March 21-25, 2016 at The Woodlands, Texas. LPI Contribution No. 1903, p.1904, March 2016.
- "The Edge of Xanadu: Investigation with Altimetry and Nadir Emissivity", Lorenz, R. D., Poggiali, V. et al., 47th Lunar and Planetary Science Conference, held March 21-25, 2016 at The Woodlands, Texas. LPI Contribution No. 1903, p.1910, March 2016.
- "Liquid-Filled Channels On Titan", *AGU Fall Meeting, San Francisco (US)*, oral presentation, 14 December 2015.
- "Canyons and Rivers on Titan", *Lakefest 2015, Ithaca (US)*, oral presentation, 28 July 2015.
- "Titan's Empty Lake Basins: Constraining Surface Physical Properties by Investigating Radar Backscatter Behavior at Multiple Incidence Angles", Michaelides, R. J., Poggiali V. et al., 46th Lunar and Planetary Science Conference, held March 16-20, 2015 in The Woodlands, Texas. LPI Contribution No. 1832, p.1581, March 2015.
- "Modeling and Observing the Role of Wind-Waves in Lake-Climate Interactions on Titan using the T104 Flyby of Kraken Mare", Hayes A., Poggiali V. et al., *AGU Fall Meeting 2014, Dec 2014, San Francisco, United States. pp.P22A-08, 2014.*
- "Small Lakes / T104 Surface Waves", *Titan Surface Workshop, Ithaca (US)*, oral presentation, 08 Oct 2014.

Seminars

- 23-24 Nov 2015, Two seminars held in the frame of the academic course of Space-Based Radar Systems, "The Cassini-Huygens mission".
- 26 May 2014, Seminar held in the frame of the academic course of Space-Based Radar Systems, "The Cassini RADAR".

Public Outreaches:

- 29 Sept. 2016, "Una Serata Su Titano", Science outreach in Italian at the Unified Military Club of Caserta, Caserta (IT).
- 28 May 2014, "An Evening on Titan", Science outreach at the British Interplanetary Society headquarters, London (UK).