

Resume

Andrea Panizzo

Engineer - PhD

General information

Andrea Panizzo is a civil engineer with a PhD in Numerical and Mathematical Modelling in Engineering.

His professional experiences include port, hydraulics, geotechnical and structural engineering design. His research experiences in the University include tsunamis, numerical modelling of fluid flows (SPH), and environmental and hydraulic problems in Venice (MOSE project).

Positions

He is a founder associate engineer of ACS Consulting (www.acsconsulting.it), an engineering company working in the design of relevant civil structures.

He is a post-doc researcher at the Rome University Sapienza, working in the port and coastal engineering area (w3.uniroma1.it/cmar).

He is a consultant engineer of Modimar s.r.l., an engineering company designing ports and coastal protection systems.

Education

- **Ph.D.** in Numerical and Mathematical Modelling in Engineering, L'Aquila University, (IT), March 2004, with Distinction.
"Physical and numerical modelling of landslide generated waves."
- **M.S.** in Civil Engineering, Port and Coastal Engineering, La Sapienza University, Rome, May 1999, with Magna cum Laude (110/110 et laude).
- Scientific Liceum "G. Peano", Monterotondo, July 1993. Votation: 60/60.

Affiliations

- Professional Engineers of Rome (Italy), registration n.21327.
- ERCOFTAC European research group SPHERIC, dedicated to SPH.

Languages

Italian (native). English (fluent).

Academic Grants

- Cartasì Campus grant (€ 2.582) for grading with magna cum laude and within the appointed period (5 years).
- Granted with five Scholarship provided by "La Sapienza" University (€ 1084 each – merit based).

Computer skills

Operating systems: Windows and Linux.

Programming languages: Fortran77/90, parallel OpenMP-MPI, Matlab, Html.

Professional software: Microsoft Office, SAP2000, AutoCad, SismiCad, Mike21, HecRas, HecHms, Rockwell Arena, Google SketchUp, Adobe Photoshop, Macromedia Dreamweaver.

Sports and hobbies

He is the coach of a volleyball team.

He played volleyball at pro level, till the age of 28 (2002).

He attended the Italian championships of Pentathlon, in 1990 and 1991.

Photography, member of the photo club "Officine Fotografiche", Rome.

Birth: Terni (IT),

February 8th 1974

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	Overview on Professional Experiences
Port Engineering	<ul style="list-style-type: none"> - Oil and Gas terminals (Port Sudan, Brindisi); - Traffic optimization (Port Sudan, Vasto, Olbia, Civitavecchia); - Layout optimization (Port Sudan, Anzio); - Design of port structures, such as quays, seawalls, caissons (Marina di Carrara, Port Sudan).
Hydraulic Engineering	<ul style="list-style-type: none"> - Analysis of resonance modes of Venice gates, MOSE project. - Numerical (SPH) calculation of flooding from tsunamis at Stromboli island (It). Evacuation plan for the Italian Civil Protection Agency. - Study of rain flows in creeks in Monterotondo (It). - Design of an dyke to protect Monterotondo (It) from flooding of Tevere river.
Structural Engineering	<ul style="list-style-type: none"> - Constructive detailed design of the highway bridge "Asse Mediano"; - Structural analysis of a canoe building under the river Tevere flood; - Definitive design of 29 subways for the new railway Milan-Verona, which includes 200 drawings and 80 reports.
Geotechnical Eng.	<ul style="list-style-type: none"> - Analysis and characterization of a landslide movement in Monterotondo. Design of the structure to fix the slope instability; - Geotechnical investigations for dredging operations in Port Sudan (SUDAN).
	Overview on Academic Research Topics
Smoothed Particle Hydrodynamics	<ul style="list-style-type: none"> - He developed his own SPH model and collaborated with Johns Hopkins University to release a freeware SPH code (http://wiki.manchester.ac.uk/sphysics/index.php/Main_Page). - He is member of the Steering Committee of the Ercoftac SPHERIC interest group on SPH. - He is the Organizer of the first international Workshop on SPH (http://w3.uniroma1.it/CMAR/SPHERIC/SPHERICWorkshop.htm).
Tsunamis	<ul style="list-style-type: none"> - Study of the flooding of the Stromboli island due to tsunamis waves. Consultant of the Italian Civil Protection Agency to define the coastal areas under the risk of flooding. - Research projects on tsunamis funded by the Italian Government, The Italian Dam Office, The Italian Civil Protection Agency (www.tsunamis.it).
Data analysis	<ul style="list-style-type: none"> - Multi channel Fourier analysis, EOF, Wavelet, Artificial Neural Networks, wave forecast.
Stock market analysis and forecast	<ul style="list-style-type: none"> - with Artificial Neural Networks.

Details on Engineering Design Experiences

with ACS Consulting	2007	Client: Consorzio Integra. End Client: Italferr. Railway AV/AC Torino-Venezia, segment Milano-Verona. Definitive design of 29 civil structures of railway and highway sub-crossing. Production of 80 reports and 250 drawings.
	2007	Client: City Hall of Monterotondo. Design of a dyke to prevent the flooding of Monterotondo from the Tevere river.
	2006	Client: City Hall of Monterotondo. Study of a slope instability and landslides occurring close to populated houses. Geotechnical characterization of the landslide movement. Design of the structures to fix the landslide movement.
	2006	Client: MODIMAR srl. Design of civil structures and quays of the new marina port at Marina di Pisa (Italy).
	2005	Client: SEIPRO. End Client: Italferr. Detailed design of the railway bridge "Asse Mediano", length 370m, 12 piles.
	2005	Client: City Hall of Monterotondo. Design and verification against water flooding of a public structure (canoe centre) to be realized on the bank of Tevere river.
	2005	Client: City Hall of Monterotondo. Study of rain flows at the S. Martino river.
with Modimar	2006-07	Client: APS Engineering, Rome. End Client: PETRONAS. Design of an oil terminal for a refinery in Port Sudan, Sudan. - Feasibility study - Basic Engineering Design - Technical and commercial evaluation of Bidders' projects.
	2007	Traffic optimization of port of Vasto.
	2003-05	Client: Consorzio Venezia Nuova. with Technital spa and Protecno srl. Structural tests on Venice mobile gates of the MOSE system, to defend Venice from floods. Definition and analysis of experimental tests to study gates resonant modes under waves. Analysis of wave loads and actions on MOSE Venice gates.
	2001-02	with Technital spa e Protecno srl Design and experimental tests of perforated breakwaters to be set in the channels of Venice to reduce ship generated water waves.
	2000	Design of port of Anzio. Study of water circulation induced by water waves using the numerical model Mike21.
Personal works	2007-08	Client: ENVIRTECH srl Design and analysis of a new prototype of a floating buoy to measure water waves.
	2005	Client: Technital spa Course on the theory and use of the numerical model of wave propagation SWAN.
	1999-2004	Consultant engineer for privates and judges in civil actions.
	1999-2008	Consultant engineer in academic projects on tsunamis and wave data analysis.

Details on Research and Academic Experiences

Participation in funded projects	2006-08	University: La Sapienza, Rome. Client: Port Authority of Civitavecchia. Wave forecast for ship traffic. Value of work: 174.000 €. Traffic analysis and models of ferry ships. Value of work: 80.000 €.
	2006	University: La Sapienza, Rome. Client: Venice Protection Agency. Analysis and numerical modelling of wind and ship generated waves in the Venice lagoon. Value of work: 75.000 €.
	2000-04	University: Università degli Studi, L'Aquila. Client: Italian Dam Office. Landslide generated waves forecast in artificial basins. Value of work: 200.000 €.
	2004	University: Università degli Studi, L'Aquila. Client: Italian Civil Protection Agency. Tsunamis at the Stromboli Island: definition of possible flooded areas. Value of work: 180.000 €.
	1999-00	University: RomaTre, Rome. Client: Italian Wave Buoy Network. Analysis and modelling of wave data from the Italian wave network. Value of work: 75.000 €.
Teaching	2008	Maritime Hydraulics and Coastal engineering, at La Sapienza University of Rome, Italy.
	1999-2007	Assistant of Prof. P. De Girolamo (L'Aquila University) and Prof. A. Noli (La Sapienza University, Rome) in the Academic courses of Maritime constructions, Maritime Hydraulics and Coastal engineering, Hydraulics, Hydraulics constructions
Organized Conference	2006	First International Workshop on SPH, Rome. 10-12 May 2006. http://w3.uniroma1.it/cmar/SPHERIC/SPHERICWorkshop.htm
Attended International Conferences	2007	ASCE Conference Coastal Structures 2007, Venice, Italy
	2006	ASCE International Conference on Coastal Eng., San Diego, USA
	2005	ASCE Waves 2005, Madrid, Spain
	2004	ASCE International Conference on Coastal Eng., Lisbon, Portugal
	2002	ASCE International Conference on Coastal Eng., Cardiff, Wales
	2002	ISOPE 2002 International Conference, Kyushu, Japan
	2001	ASCE Conference Waves 2001, San Francisco, CA
Given Seminars	2005	Keynote speaker at the Workshop "Onde di maremoto: meccanica della generazione, propagazione e interazione con le coste", L'Aquila University. 12 th July 2005. L'Aquila, Italy
	2005	Keynote speaker at the "Workshop on tsunamis: models and phenomenology", La Sapienza Univ.. 4 th March 2005. Rome, Italy.
	2004	"Landslide generated waves in artificial reservoirs: experimental and numerical studies", Tor Vergata Univ. 25 th May 2004. Rome, It.
	2004	"Physical and numerical modelling of subaerial landslide generated waves", Cornell University. 10 th Aug 2004. Ithaca, NY, USA.
	2003	"Modelling water waves generated by landslides", Johns Hopkins University. 10 th Jan 2003. Baltimore, MD, USA.
Visiting scientist	2007-08	2 Months at Monash University, Melbourne, Australia. Working with Prof. J.J. Monaghan.
	2006	1 Month at Johns Hopkins University, Baltimore, MD, USA. Working with Prof. R.A. Dalrymple.
	2004	3 Months at Johns Hopkins University, Baltimore, MD, USA. Working with Prof. R.A. Dalrymple.
	2003	3 Months at Johns Hopkins University, Baltimore, MD, USA. Working with Prof. R.A. Dalrymple.

	Publications	
PhD thesis	2004	Panizzo, A.: "Physical and numerical modelling of subaerial landslide generated waves". PhD thesis in Numerical and Mathematical Modelling in Engineering, L'Aquila University, 131 pages, 2004..
Rewiever-Referee		International Journal for Numerical Methods in Fluids Experiments in Fluids IAHR Journal Natural Hazards and Earth System Sciences
Publications on International Journals		<ol style="list-style-type: none"> 1) Panizzo, A., Bellotti, G., De Girolamo, P., "Application of wavelet transform analysis to landslide generated waves", Coastal Engineering 44-4, pp 321-338, Elsevier, 2002. 2) Panizzo, A., Piscopia, R., De Girolamo, P., "Experimental optimization of perforated structures in presence of ship generated waves", International Journal of Offshore and Polar Engineering, Vol. 14, No. 2, June 2004. 3) Piscopia, R., Panizzo, A., De Girolamo, P., "An efficient method to identify cross sea conditions from wave measurements", Coastal Engineering, 51-10, pp. 941-965, Elsevier, 2004. 4) Panizzo, A., De Girolamo, P., Di Risio, M., Maistri, A., Petaccia, A., "Great landslide events in Italian artificial reservoirs", Natural Hazards and Earth System Sciences, 5, 733-740, 2005. 5) Panizzo, A., De Girolamo, P., Petaccia, A., "Forecasting impulse waves generated by subaerial landslide", J. Geophysical Research., 110, C12025, doi:10.1029/2004JC002778, 2005. 6) Panizzo, A., Sammarco, P., Bellotti, G., De Girolamo, P., "EOF Analysis of complex response of Venice tidal barriers", Journal of Waterway, Port, Coastal, and Ocean Engineering, Vol. 132, No. 3, May 1, 2006. 7) Panizzo, A., Briganti, R., "Analysis of wave transmission behind low-crested breakwaters using neural networks", Coastal Engineering, 2007, doi:10.1016/j.coastaleng.2007.01.001. 8) Yuk, D., Yim, S.C., Panizzo, A., Di Risio, M., Liu, P.L.-F., "Numerical Simulations of Wave Generation by a Vertical Plunger", in publication on ASCE Journal of Waterway, Port, Coastal, and Ocean Engineering, 2006. 9) Di Risio, M., Bellotti, G., Panizzo, A., & De Girolamo, P. "Three-dimensional experiments on water waves generated by landslides at a sloping coast", submitted to Journal of Fluid Mechanics, 2007. 10) Di Risio, M., De Girolamo, P., Bellotti, G., Panizzo, A., Aristodemo, F., Molfetta, M. "Tsunamis generated by landslides at the coast of a conical island: new physical model experiments", submitted to J. Geophysical Research, 2007.
Conference Proceedings		<ol style="list-style-type: none"> 1) Panizzo A., Beltrami, G. M., De Girolamo, P.: "A neural network approach to characterize landslide generated waves into reservoirs", IAHR Symp., St. Petersburg, 2002. 2) Panizzo A., Piscopia, R., De Girolamo, P.: "Experimental optimization of perforated structures in presence of ship generated waves", Atti dell'ISOPE 2002 Conference, Kyushu, 2002. 3) Piscopia, R., Franco, L., Panizzo A., Corsini, S., Inghilesi, R., "Analysis of 12-year wave measurements by the Italian Wave Network", ICCE 2002 Conf., Cardiff, 2002. 4) Panizzo A., Briganti, R., Van Der Meer, J., Franco, L., "Analysis of wave transmission behind rubble mound low crested structures using neural networks", ASCE Coastal Structures Conference, Portland, 2003. 5) Panizzo A., Dalrymple, R. A., "SPH modelling of underwater landslide generated waves", ICCE 2004 Conference, Lisbona. 6) De Girolamo P., Maistri, A., Panizzo, A., Petaccia, A., "Great landslide events in Italian artificial reservoirs", XXXII Int. Geological Congress, Florence, Italy, 2004. 7) Di Risio, M., Panizzo A., "Analytical and SPH approaches to simulate landslide generated waves runup", WAVES2005 Conference, ASCE, Madrid, 2005. 8) De Girolamo, P., Bellotti, G., Di Risio, M., Panizzo A., "Tsunamis waves generated by landslides on a plane beach: new three dimensional experiments", EGU General Assembly, Vienna, 2006. 9) Panizzo, A., De Girolamo, P., "SPH3D simulation of the tsunamis of December 30, 2002 at Stromboli volcano", EGU General Assembly, Vienna, 2006. 10) Panizzo A., Cuomo, G., Dalrymple, R. A., "3D-SPH simulation of landslide generated waves", ICCE 2006 Conference, San Diego, 2006. 11) Cuomo, G., Panizzo A., Dalrymple, R. A., "SPH-LES two phase simulation of wave breaking and wave-structure interaction", ICCE 2006 Conf., San Diego, 2006. 12) Bellotti, G., Di Risio, M., Panizzo A., De Girolamo, P., "Tsunami waves generated by landslides along a straight sloping coast: new three-dimensional experiments", ICCE 2006 Conference, San Diego, 2006. 13) De Girolamo, P., Wu, T.R., Liu, P. L. F., Panizzo A., Bellotti, G., Di Risio, M., "Tsunami waves generated by landslides along a straight sloping coast: new three-dimensional experiments", ICCE 2006 Conference, San Diego, 2006. 14) Del Guzzo, A., Panizzo, A., Bellotti, G., Longo, D., De Girolamo, P., "Simulation of fluid-structure interaction using Smoothed Particle Hydrodynamics and non-linear shallow water equations", IAHR 2007 Conference, Venice, 2007. 15) Noli, A., Panizzo, A., Lovisa, C., De Girolamo, P., Beltrami, G.M., Di Risio, M. "Further investigation on the technology of caisson breakwaters interconnected by spanners", Coastal Structures Conference, Venice, 2007.