

## LUIGI CARASSALE

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Born: June 14, 1972  
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### Education:

Ph.D. Civil Engineering, University of Florence / University of Genoa, April 2002  
*Dissertation title:* “The Volterra approach in non-linear structural dynamics”

M.S. Civil Engineering, University of Genoa, April 1997  
*Thesis title:* “Dynamic response of structures by double modal transformation”

### Relevant Experience:

- 1/2003 – present Assistant professor at University of Genoa.
- 7/2000 – 6/2001 Visiting research student at the University of Notre Dame, USA.
- 6/2000 Member of the committee for the organisation of the “International Advanced School on Wind-Excited and Aeroelastic Vibrations of Structures”, University of Genoa, Genoa.

### Teaching:

- 2004 – present Structural mechanics, 2<sup>nd</sup> level course in Naval Engineering, University of Genoa
- 2004 Probability, Statistic and Simulation, Master Course in Wind Engineering, Polytechnic of Milan.

### Honours:

Award of the Italian national association for wind engineering (ANIV) “For a scientific paper by a young researcher on the themes of wind engineering”.

### Funded Research Topics:

- Implementation of a method for the calculation of the along-wind dynamic response of vertical structures (ENEL Power).
- Anemological study of the Albenga airport (ENAV).
- Evaluation of the design wind for the Messina Strait Bridge (Messina Strait Bridge Company).
- Probabilistic analysis of the wind speed and prediction of critical wind conditions along the Rome-Naples high-speed railway line (Italian Railway Network Company).
- Analysis of the vibration and study of the reliability of the brine recirculation pumps in Shuweihat (UAE) and Ras Laffan (Qatar) desalination plants (FISIA Italimpianti).
- Study and validation of a vibration-based health monitoring technique for the brine recirculation pumps in Shuweihat and Taweelah (UAE) desalination plants (FISIA Italimpianti).

### Selected Pertinent Publications:

- Solari, G. and Carassale, L., (2000). "Modal Transformation Tools in Structural Dynamics and Wind Engineering", *Wind & Structures*, **3**(4), 221-242.
- Carassale, L., Piccardo G. and Solari, G., (2001). "Double Modal Transformation and Wind Engineering Applications", *Journal of Engineering Mechanics*, ASCE, **127**(5), 432-439.
- Carassale, L. and Solari, G., (2002). "Wind Spectral Modes for Structural Dynamics: A Continuous Approach", *Probabilistic Engineering Mechanics*, **17**, 157-166.
- Carassale, L. and Piccardo, G. (2003). “Wind-induced nonlinear oscillations of cables by volterra approach”, *Proc. Fifth International Symposium on Cable Dynamics*, Santa Margherita Ligure, 15-18 Sept. 2003, pp. 149-156.
- Carassale, L. and Karrem, A., (2003). "Dynamic Analysis of Complex Nonlinear Systems by Volterra Approach", In: *Computational Stochastic Mechanics*, Spanos & Deodatis eds., Proc. CSM4, Corfu, Greece, June, 2002, pp. 107-117.
- Carassale L., and Piccardo G. (2004). “A reduced model for nonlinear response of cables in turbulent wind”. *Proc. Advances in Structural Engineering and Mechanics*, ASEM’04, Seoul, Korea, September 2-4, 2004.
- Carassale, L., Hibi, K., Pagnini, L.C., Solari, G., and Tamura, Y. (2004). “POD analysis of the dynamic wind pressure on a tall building”. *Proc. 5th Int. Coll. on Bluff Body Aerodyn. & Appl.*, BBAA V, Ottawa, July, 2004, pp. 309-312.
- Carassale, L., 2005. POD-based filters for the representation of random loads on structures. *Prob Engng Mech*, **20**, 263-280.
- Carassale, L., Freda, A. and Piccardo, G., (2005). “Aeroelastic forces on yawed circular cylinders: quasi-steady modelling and aerodynamic instability”. *Wind & Structures*, **8**(5), 373-388.
- Carassale, L. and Solari, G. (2006). “Monte Carlo simulation of wind velocity fields on complex structures”. *J. Wind Engng. Ind. Aerodyn.*, **94**, 323-339.
- Carassale, L. and Percivale, F. (2006). “Frequency-domain output-only identification of linear structures subject to stationary excitation”, *5<sup>th</sup> Int. Conf. on Stochastic Mechanics*, Rhodes, Greece, June 2006, in press.
- Solari, G., Carassale, L. and Tubino, F. (2007). “Proper Orthogonal Decomposition in Wind Engineering: Part 1: A State-of-the-Art and Some Prospects”. *Wind & Structures*, **10**(2), 177-208.
- Carassale, L., Solari, G. and Tubino, F. (2007). “Proper Orthogonal Decomposition in Wind Engineering: Part 2: Theoretical Aspects and Some Applications”. *Wind & Structures*, **10**(2), 209-214.
- Burlando, M., Carassale, L., Georgieva, E., Ratto, C. and Solari, G. (2007). “A simple and efficient procedure for the numerical simulation of wind fields in complex terrain”. *Boundary-Layer Meteorology*, In press.