

CURRICULUM VITAE

PERSONAL INFORMATION

Name: **Fiammetta Venuti**
Date of birth: 17 December 1978
Nationality: Italian
Affiliation: Dipartimento di Ingegneria Strutturale, Edile e Geotecnica
e-mail: fiammetta.venuti@polito.it



EDUCATION

- 2008 PhD in Structural Engineering
Department of Structural and Geotechnical Engineering, Politecnico di Torino, Italy
- 2003 Master degree in Architecture
Faculty of Architecture, Politecnico di Torino, Italy

CURRENT POSITION

From 28 Dec 2012 Temporary researcher (letter a, art.24 L.240/2010)
Department of Structural, Geotechnical and Building Engineering, Politecnico di Torino, Italy

PREVIOUS POSITION

15 Jun 2009 – 27 Dec 2012 Postdoctoral fellow
Department of Structural and Geotechnical Engineering, Politecnico di Torino, Italy
Department of Architecture and Design, Politecnico di Torino

RESEARCH THEMES

- Crowd-structure interaction on laterally vibrating footbridges
- Crowd-structure interaction on vertically vibrating footbridges
- Modelling of the moving crowd flow and its dynamic action
- Linear and non linear behaviour of suspended footbridges
- Mitigation of human-induced vibrations on footbridges through walkway shaping
- Numerical optimization in the design of cable structures
- Effects of geometrical imperfections on the stability of Grid Shells

FELLOWSHIPS AND AWARDS

1 Jan 2008 – 14 Jun 2009 Scholarship “Progetto Langrange”, Fondazione CRT – Fondazione ISI - Call 06/2007,
Department of Structural and Geotechnical Engineering, Politecnico di Torino, Italy

2008 IABSE Outstanding Paper Award 2007, assigned by IABSE for the paper: Venuti F., Bruno L., Napoli P., Pedestrian lateral excitation on lively footbridges: a new load model, SEI Structural Engineering International, vol. 17, n. 3, pp. 236-241, 2007

Award for the second best lecture during the 7th International Fib PhD Symposium in Civil Engineering (Stuttgart, DE).

2007 Outstanding Contribution Award, promoted by the International Association of Bridge and Structural Engineering IABSE, during the Young Engineers’ Symposium 2007 (Fribourg, CH)

2005 Mention for the Young Engineers Award, during the 2nd International Congress Footbridge 2005 (Venezia).

- 2003 Award for the best Degree Thesis, promoted by Promozione Acciaio in the XIX Congress Collegio Tecnici dell' Acciaio (CTA)
- Award "Premio Optime 2002-2003", promoted by Unione Industriale di Torino, selecting the best results in master degree thesis

RESEARCH GRANTS

- 2008 Annual grant for the research project "*Modelling and computational simulation of pedestrian traffic dynamics*" founded by Foundation Talent Support 2007 - International Association of Bridge and Structural Engineering IABSE
- 2006-2008 Member of the Local Research Unit (Politecnico di Torino) of the PRIN2006: "Aeroelastic phenomena and other dynamic interactions on non-conventional bridges and footbridges". Title of the local research project: "*Computational simulation of wind-structure and crowd-structure interaction in over-crossings works (Simulazione computazionale dell'interazione vento-struttura e pedoni-struttura in opere di attraversamento)*".

REVIEWER ACTIVITY

- From 2008 Reviewer of the following international journals:
- The HKIE Transactions
 - ASCE Journal of Structural Engineering
 - ASCE Journal of Bridge Engineering
 - SEI Structural Engineering International
 - Physics of Life Reviews
 - Journal of Transportation Engineering
 - Journal of Civil Engineering and Management

INVITED LECTURES AND CHAIR

- 2014 Co-chair of one parallel session of the Mini-symposium "Human induced vibrations" at IX International Conference on Structural Dynamics EURODYN 2014, Porto, 30/06-02/07/14
- 2008 Keynote lecture at the international Workshop CSHM2 (Civil Structure Health Monitoring 2), Taormina, 28/09-01/10/08, Title of the presentation: Pedestrian loads and dynamic performances of lively footbridges: an overview on measurement techniques and codes of practice

TEACHING ACTIVITIES

- 2015 Co-supervisor, with Francesca De Filippi (DAD) of the student Workshop "Anpil Pay 2.0", related to the design and construction of a load-bearing straw bale prototype house
- 2013-2015 Course leader – Structural design, Master degree in Architecture
- 2010-2011
- 2012-2013 Teaching assistant – Structural rehabilitation, Bachelor degree in Architecture
- 2011-2012 Teaching assistant – Structures, Bachelor degree in Architecture
- 2007-2010 Course leader – Structural analysis with FE software, Master degree in Architecture
- 2009-2010 Course leader – Design of beam-wall structures, Master degree in Architecture
- 2007-2008 Course leader – Design of footbridges, Master degree in Architecture
- 2003-2006 Teaching assistant – Structural design, Bachelor degree in Architecture

SUPERVISION OF GRADUATE STUDENTS

- 2009 – 2015 Number of Master Students: 8
Faculty of Architecture, Politecnico di Torino, Italy
The thesis co-supervised with Francesca De Filippi:
C. Miotto, Kay Zewo: a load-bearing straw bale house prototype for Haiti (in Italian),
Master Thesis in Architecture, Politecnico di Torino, 2014
received the Best Thesis Award by Davide Salaspini Trumun Association
- 2007 – 2010 Number of Master Students: 2
Faculty of Mathematical Modelling in Engineering, Politecnico di Torino, Italy
- 2010 Number of Master Students: 1
Faculty of Civil Engineering, Politecnico di Torino, Italy

CAREER BREAKS

- 13 Jul 2011- 12 Mar 2012 maternity leave (5 months) + parental leave (3 months)
- 29 Sep 2015- 29 Feb 2016 maternity leave

SELECTED PUBLICATIONS

- [1] Bruno L., Sassone M., Venuti F. (2016), Effects of the Equivalent Geometric Nodal Imperfections on the stability of single layer grid shells, *Engineering Structures*, 112: 184-199
- [2] Venuti F., Bruno L. (2013), Mitigation of human-induced lateral vibrations on footbridges through walkway shaping, *Engineering Structures*, 56: 95-104
- [3] Venuti F. (2013), Towards a unified theory of pedestrian dynamics. Comment on “The emergence of design in pedestrian dynamics: Locomotion, self-organization, walking paths and constructal law” by A.F. Miguel, *Physics of Life Reviews*, 10: 193-194
- [4] Venuti F. (2013), Lively footbridges: overview and perspectives for the development of crowd and structure monitoring systems, *International Journal of Lifecycle Performance Engineering*, 1:92-113
- [5] Bruno L., Venuti F., Nascè V. (2012), Pedestrian-induced torsional vibrations of suspended footbridges: proposal and evaluation of vibration countermeasures. *Engineering Structures*, 36: 228-238
- [6] Bruno L., Venuti F., Scotti A. (2011), Limit of hanger linearity in suspension footbridge dynamics: A new section model. *Journal of Sound and Vibration*, 330: 6387-6406
- [7] Bruno L., Tosin A., Tricceri P., Venuti F. (2011), Non-local first-order modelling of crowd dynamics: a multidimensional framework with applications, *Applied Mathematical Modelling*, 35: 426-445
- [8] Venuti F., Bruno L. (2009), Crowd-structure interaction in lively footbridges under synchronous lateral excitation: A literature review, *Physics of Life Reviews*, 6: 176-20
- [9] Bruno L., Venuti F. (2009), Crowd-Structure Interaction in footbridges: modelling, application to a real case-study and sensitivity analyses, *Journal of Sound and Vibration*, 323: 475-493
- [10] Bruno L., Venuti F. (2010), A simplified approach for footbridge serviceability assessment under lateral crowd loading, *SEI Structural Engineering International*, 20(4) : 442-446
- [11] Venuti F., Bruno L. (2007), An interpretative model of the pedestrian fundamental relation, *Comptes Rendus Mecanique*, 335: 194-200
- [12] Venuti F., Bruno L. (2007), The synchronous lateral excitation phenomenon: modelling framework and an application, *Comptes Rendus Mecanique*, 335: 739-745
- [13] Venuti F., Bruno L., Napoli P. (2007), Pedestrian lateral excitation on lively footbridges: a new load model, *SEI Structural Engineering International*, 17(3): 236-241
- [14] Venuti F., Bruno L., Bellomo N. (2007), Crowd dynamics on a moving platform: mathematical modelling and application to lively footbridges, *Mathematical and Computer Modelling*, 45: 252-269