

March 26<sup>th</sup>, 2018

## *Curriculum Vitae et Studiorum*

# Igor Lanese

### PERSONAL DETAILS

Address: [confidential]  
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Born in: [confidential]  
date: [confidential]

### STUDIES

September 2015

**Italian engineering professional license** registered at “Ordine degli Ingegneri della Provincia di Pavia”, n.3335/A

May 2015

**International II level University Master in Earthquake Engineering and Engineering Seismology** at IUSS-Rose School of Pavia, 90 ECTS, courses and thesis held in English.

Master thesis: *Seismic Vulnerability of an Infilled Frame Structure Designed for Gravity Loads and Evaluation of the EC8-based Assessment Procedures.*

Supervisor: Prof. Alberto Pavese (University of Pavia)

From September 2009 to August 2012

**PhD in Earthquake Engineering and Engineering Seismology at Rose School of Pavia** (Italy) with the final evaluation of “Excellent”.

6 months internship at CEA (Commissariat à l'énergie atomique et aux énergies alternatives) of Saclay, France.

PhD dissertation : *Development and Implementation of an Integrated Architecture for Real-Time Dynamic Hybrid Testing in the Simulation of Seismic Isolated Structures.*

Supervisors: Prof. Alberto Pavese (University of Pavia), Eng. Alain Le Maoult (CEA, Saclay)

September 2007

**State exam to qualify as professional engineer**

April 2007

**Laurea Specialistica in Civil Engineering** (Structural Design)

Grade: 110/110 cum laude

at: Università degli Studi di Pavia.

Graduation thesis: *Valutazione Numerico-Sperimentale del Comportamento Sismico di un Edificio Esistente Progettato per soli Carichi Verticali.*

Supervisor: Prof. Alberto Pavese

Assistant supervisor: Eng. Roberto Nascimbene

September 2004

**Laurea di Primo Livello in Civil Engineering**

Grade: 107/110

at: Università degli Studi di Pavia.

Graduation thesis: *Progettazione di una Struttura in CA*

Supervisor: Prof. Ester Cantù

July 2001

**Technical maturity diploma**

at: Istituto Tecnico per Geometri “J. Brocherel”

CAREER

From May 2007 to today

**Researcher at EUCENTRE** (European Centre for Training and Research in Earthquake Engineering) of Pavia in the Industrial Products Department.

Current position: **Scientific Coordinator Tests on Dampers and Shock Transmitters of the Eucentre Experimental Laboratory**

Main duties/interests:

- Scientific Coordinator Tests on Dampers and Shock Transmitters: design, assessment, implementation, execution and results interpretation of the experimental tests;
- Responsible for the development of an innovative real-time hybrid testing system with sub-structuring with application to seismic isolated bridges and structures;
- Project manager of the EUCENTRE activities for SERA project (Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe), involving 31 international partners across Europe, in which EUCENTRE is the coordinator for the transnational access to 13 experimental testing facilities (shake tables, bearing testing system, reaction walls, centrifuges, etc.) in different European countries;
- Project manager of the experimental activities of “Progetto Scuole” project (Convenzione con Centro di Geomorfologia Integrata per l’Area del Mediterraneo), related to the design and implementation of

an innovative dynamic monitoring system for school buildings of different structural typologies (masonry, pre-cast, reinforced concrete), with connected cloud database;

- Project manager of the experimental activities of STRIT project (Strumenti e Tecnologie per la gestione del Rischio delle Infrastrutture di Trasporto);
- Co-worker at the design and development of the emergency intervention Eucentre module ASA (Advanced Seismic Assessment);
- Co-worker in several national and international research projects (some of them are listed):
  - Progetto Esecutivo 2005-2008 (progetto di ricerca 1), related to the numerical and experimental investigation of the seismic response of a typical RC existing building, representative of the southern Europe 50s-60s construction practice. Numerical simulation and shake table tests of a 3-storey 1:2 scale specimen, both in as-built and FRP retrofit configuration;
  - DPC 2016 sub-project S.2.0 with the Civil Protection Department: Sistemi di isolamento sismico e smorzamento aggiunto. Valutazione della risposta sismica dei dispositivi e delle strutture;
  - DPC 2017 project 3 with the Civil Protection Department: Verifica dell'isolamento sismico di edifici tramite prove ibride con sottostrutturazione sperimentale e numerica
  - Progetto Esecutivo 2008-2011 (progetto e3);
  - STEP (Strategies and Tools for Early Post earthquake assessment), related to the advanced assessment of structures with earthquake damage;
  - EFAST 2008-2010 (Collaborative design study of a major European dynamic testing facility), mainly related to the design study of a beyond-state-of-art European testing facility; the project involved 5 international European partners;
- Data-processing software implementation for laboratory and in-situ experimental tests on structures and seismic devices. The software is oriented both to the testing campaign results interpretation, and to the rapid evaluation of the testing campaign evolution, in order to modify or confirm the foreseen testing protocol;
- Both fast and accurate assessment of structures after the seismic events of “L’Aquila 2009” and “Amatrice 2016”, mainly school buildings, churches and houses; coordinator of the Eucentre assessment teams (August 29<sup>th</sup> – September 4<sup>th</sup>, 2016) and cultural heritage team leader (October 10<sup>th</sup> – 13<sup>th</sup>, 2016);

- Teaching courses on structures survey and damage assessment within the following projects: STEP, DRHOUSE, SERIES, MATILDA.
- Collaboration in the design and implementation of a high-resolution machine vision system for the wireless remote measurement of the displacement during static and dynamic experimental tests.

June - July 2000

Stage at surveyor technical office EffeDue of Aosta, Italy

Main duties: topographic relief, CAD design (AutoCad, ArchiCad).

## PUBLICATIONS

### **Books:**

M Tondelli, S Petry, I Lanese, S Peloso, K Beyer “Shake table testing of a half-scaled RC-URM wall structure”, *Experimental Research in Earthquake Engineering*, 295-306, 2015

### **Journal papers:**

- A. Pavese, I. Lanese, R. Nascimbene “Seismic vulnerability assessment of an infilled reinforced concrete frame structure designed for gravity loads” *Journal of Earthquake Engineering*, DOI:10.1080/13632469.2016.1172372, Published online: 31 May 2016, Taylor & Francis

- F. Dell'Acqua, I. Lanese, D.A. Polli “Integration of EO-based vulnerability estimation into EO-based seismic damage assessment: a case study on L’Aquila, Italy, 2009 earthquake, *Natural Hazard (NHAZ2133R3*, to be published in 2013)

- Lanese, I., Pavese, A., Dacarro, F. *Development of Software and Hardware Architecture for Real-Time Dynamic Hybrid Testing and Application to a Base Isolated Structure*. *Journal of Earthquake Engineering*, 16(S1):65-82, 2012

- Lanese, I., Marazzi, F., Nascimbene, R. *Il cambiamento di scala delle strutture per la verifica sismica su tavola vibrante di un telaio in c.a. progettato per carichi verticali*. *Ingegneria sismica*, anno XXV N.4 2008

### **Conference papers:**

- G. Abbiati, E. Cazzador, I. Lanese, S. Eftekhari Azam, O. S. Bursi, and A. Pavese, “Recent advances on the hybrid simulation of bridges base on partitioned time integration, dynamic identification and model updating”, proceeding of the 6th International Conference on Advances in

Experimental Structural Engineering August 1-2, 2015, Urbana-Champaign, Illinois.

- G. Abbiati; O.S. Bursi; I. Lanese; A. Pavese, "Hybrid simulations of complex isolated bridges enhanced with parallel time integrators and model updating" in EU-US-Asia workshop on hybrid testing Joint Research Centre, Ispra: JRC, 2015. Proceeding of: EU-US-Asia workshop on hybrid testing, Ispra, Italy, 5-6 October, 2015 – presentation only –
- I. Lanese, A. Pavese, “Design, Implementation and Validation of a Real-Time Dynamic Hybrid HybridTesting System Mainly Oriented to Seismic Isolated Structures Testing System Mainly Oriented to Seismic Isolated Structures”, proceeding of the 5th International Conference on Advances in Experimental Structural Engineering November 8-9, 2013, Taipei, Taiwan
- M. Tondelli, S.Petry, I.Lanese, K.Beyer, S.Peloso, “Shake table testing of a half scaled RC-URM walls structure”. Proceedings of the SERIES Concluding Workshop - Joint with US-NEES "Earthquake Engineering Research Infrastructures", May 2013, Ispra (IT)
- F. Dell'Acqua, I. Lanese, D.A. Polli, P. Gamba “Is physical vulnerability helpful in SAR-based seismic damage assessment? A preliminary study”, proceeding of the Tyrrhenian Workshop 2012 on Advances in Radar and Remote Sensing, Napoli, Italy, September 12th-14th, 2012
- S. Peloso, I. Lanese, A. Pavese, A. Zanardi “Innovative Construction Techniques for Buildings in Seismic Areas Structural Modelling and Design Issues”. 14ECEE, Ohrid, August 30<sup>th</sup> - September 3<sup>rd</sup>, 2010
- F. Lunghi, A. Pavese, S. Peloso, I. Lanese, D. Silvestri “Computer Vision System for Monitoring in Dynamic Structural Testing” SERIES project workshop, Ohrid, August 30<sup>th</sup> - September 3<sup>rd</sup>, 2010
- Peloso, S., Lanese, I., Pavese, A., Zanardi, A. *Modeling and Design Issues of Non Load-Bearing Permanent Shuttering Systems with Concrete under Seismic Loads*. SEMC2010, Cape Town, September 6-8<sup>th</sup>, 2010.
- Peloso, S., Lanese, I., Pavese, A., Zanardi, A. *Innovative Construction Techniques for Buildings in Seismic Areas Structural Modelling and Design Issues*. 14ECEE, Ohrid, August 30<sup>th</sup> - September 3<sup>rd</sup>, 2010
- Pavese, A., Lanese, I. *Verification of EC8-based assessment approaches*

*applied to a building designed for gravity-loads through the use of shaking table tests*. ACES workshop, Corfu, July 4<sup>th</sup> – 7<sup>th</sup>, 2009

- Lanese, I., Pavese, A., Crisafulli, F.J. “*Prove su tavola vibrante di un edificio in c.a. progettato per soli carichi gravitazionali, risposta sismica e interazione pannelli-struttura*”. Anidis 2009, Bologna (Italy), June 28<sup>th</sup> – July 2<sup>nd</sup>, 2009
- Lanese, I., Crisafulli, F.J., Pavese, A. “*Shake table test of a R.C. building designed for gravity load only, seismic response and frame-panel interaction*”. CompDyn 2009, Rhodes (Greece), June 22-24<sup>th</sup>, 2009
- Fragiadakis, M., Lanese, I., Pavese, A., Papadrakakis, M. “*Experimental and numerical investigation of a reinforced concrete building designed for gravity loads only*”. CompDyn 2009, Rhodes (Greece), June 22-24<sup>th</sup>, 2009
- Lanese, I., Nascimbene, R., Pavese, A., Pinho, R. “*Simulazioni numeriche di un telaio 3D tamponato in supporto di prove dinamiche su tavola vibrante*”. Reluis 2008, Rome (Italy), May 29-30<sup>th</sup>, 2008

## TEACHING ACTIVITIES

Teaching assistance at Università degli Studi di Pavia, civil engineering curriculum:

- 2013/2014 : Class, exercises and exams of Progetto di Strutture in Zona Sismica (Seismic design) -16 hours-
- 2012/2013 : Class, exercises and exams of Progetto di Strutture in Zona Sismica (Seismic design) -16 hours-
- 2011/2012 Class, exercises and exams of Progetto di Strutture in Zona Sismica (Seismic design) -28 hours-
- 2010/2011 : Class, exercises and exams of Progetto di Strutture (Structural Design) -30 hours- (\*)
- 2009/2010 : Class, exercises and exams of Progetto di Strutture (Structural Design) -30 hours- (\*)

<sup>(\*)</sup> the collaboration was not established by a written agreement and documentation that proves that activity was not produced by the course responsible, therefore it is not available

## KNOWLEDGE AND COMPETENCES

### Languages

Italian: mother tongue

English: fluent (written and spoken)

French: fluent (spoken), good (written)

Language certificates:

- Pleine connaissance de la langue française (ITG “J. Brocherel” - Aosta, July 2001).

#### Computer knowledge

OS: Windows, MAC, Dos, iOS, Android

Programs: Matlab & Simulink, OpenSees, SeismoStruct, SeismoSignal, Response2000, Sap2000 Nonlinear, ProSA, AutoCAD, ArchiCAD, Adobe Photoshop, Camera Raw Adobe Audition, Office.

Programming languages: Matlab, Fortran, QBasic

#### CERTIFICATES

- Pilot Licence for Remotely Piloted Aircraft Systems
- Scientific coordinator of the Eucentre Experimental Laboratory;
- Eucentre Team responsible (preposto);
- Introduction course to UNI CEI EN ISO/IEC 17025:2005 regulations  
“Requisiti per la competenza dei laboratori di prova e taratura”
- Training course "SIMULINK for the dynamic systems modelling"
- In charge of the Eucentre First Aid intervention
- In charge of the Eucentre Fire intervention – medium risk –
- Module Exercise within the Union Civil Protection Mechanism
- Civil Protection exercise “I quaderni del D.R.P.C. – Isole D’Anpas - )
- Basic worker training
- Specific worker training – medium and high risk –
- Training for Work at Height and use of ladders
- Short Course in “Effetti delle vibrazioni sulle strutture e sulle persone: tecniche di misura e metodi di valutazione”

#### PERSONAL INTERESTS & HOBBIES

Playing the guitar, sport (bike, ski, snowboard, tennis), photography

Igor Lanese