PROCEDURA SELETTIVA DI CHIAMATA PER N. 1 POSTO DI RICERCATORE A TEMPO DETERMINATO DI TIPOLOGIA B PER IL SETTORE CONCORSUALE 08/B2 - SETTORE SCIENTIFICO-DISCIPLINARE ICAR/08 - PRESSO IL DIPARTIMENTO DI INGEGNERIA STRUTTURALE E GEOTECNICA DELL'UNIVERSITÀ DEGLI STUDI DI ROMA "LA SAPIENZA" BANDITA CON D.R. n. 3615/2019 DEL 22/11/2019

ALLEGATO B11 ALL'ALLEGATO B DEL VERBALE 2 BIS

TITOLI UTILI AI FINI DELLA PROCEDURA SELETTIVA

Valeria Settimi

- **Dottorato di Ricerca e Abilitazione Scientifica Nazionale**

  - Dottorato di Ricerca in Ingegneria delle Strutture, con borsa, conseguito in data 07/10/2013 presso il Dipartimento di Ingegneria Strutturale e Geotecnica, Sapienza Università di Roma, con tesi dal titolo: "*Bifurcation scenarios, dynamical integrity and control of noncontact Atomic Force Microscope*", tutor Professor Giuseppe Rega. Valutazione: Eccellente (documento allegato)

  - Abilitazione scientifica nazionale (ASN) alle funzioni di professore universitario di seconda fascia per il SSD ICAR-08/B2 - Scienza delle costruzioni, conseguita in data 09/09/2019, in seguito a presentazione della relativa domanda per il secondo quadrimestre 2019 della tornata MIUR-ASN 2018/2020.

- **Attività didattica a livello universitario**

  - Docente a contratto per il corso di Meccanica delle Strutture (8 CFU) nell'ambito della Laurea Magistrale a Ciclo Unico in Architettura UE della Facoltà di Architettura della Sapienza Università di Roma (2018-2019)

  - Attività di supporto alla didattica presso la Facoltà di Architettura della Sapienza Università di Roma, Corso di Laurea in Architettura UE, per il corso di Scienza delle Costruzioni, prof. Francesco Romeo (2017- 2018) (documento allegato)

  - Attività di supporto alla didattica presso la Facoltà di Architettura della Sapienza Università di Roma, Corso di Laurea in Architettura UE, per il corso di Scienza delle Costruzioni, proff. Danilo Capecchi e Giuseppe Rega (2015-2017) (documento allegato)

  - Attività di supporto alla didattica presso la Facoltà di Architettura della Sapienza Università di Roma, Corso di Laurea in Architettura UE, per il corso di Meccanica delle Strutture, prof. Francesco Romeo (2013-2017) (documento allegato)

  - Attività di supporto alla didattica presso la Facoltà di Architettura della Sapienza Università di Roma, Corso di Laurea in Architettura UE, per il corso di Scienza delle Costruzioni, prof. Giuseppe Rega (2010-2015) (documento allegato)

- **Attività di formazione o di ricerca**

  - Visiting PhD al Technion University of Haifa, Israele, presso il gruppo di ricerca del Professor Oded Gottlieb (Settembre-Dicembre 2011) (documento allegato)

  - Assegni di ricerca per la collaborazione al programma di ricerca "*Modellazione e dinamica non lineare di microscopi a forza atomica*" (01/05/2012 – 30/04/2018)

  - Borse di studio per la partecipazione ai corsi avanzati CISM (International Centre for Mechanical Sciences):

Titoli VALUTABILI

- "*Global Nonlinear Dynamics for Engineering Design and System Safety*" (13-17/06/2016, Udine, Italia) (documento allegato)

- "*The Art of Modeling Mechanical Systems*" (27-31/07/2015, Udine, Italia) (documento allegato)

- Borse di studio Marie Curie per la partecipazione ai corsi di formazione SICON (Stability, Identification and Control of Nonlinear dynamical systems):

  - "*Nonlinear Dynamics, Stability, Identification and Control of Systems and Structures*" (FC) (21-25/09/2009, Roma, Italia) (documento allegato)

  - "*Vibration Testing, Identification of Linear and Nonlinear Systems"* (TC5) (06-10/07/2009, Liegi, Belgio) (documento allegato)

  - "*Advanced Nonlinear Dynamics and Chaotic Dynamical Systems*" (TC4) (29/03-03/04/2009, Lione, Francia) (documento allegato)

- Corso di formazione in "*Calcolo scientifico e tecnico in linguaggio C*" presso il CASPUR - Consorzio Interuniversitario per le Applicazioni di Supercalcolo per Università e Ricerca (09-12/03/2010, Roma, Italia) (documento allegato)

- Corso di formazione superiore in "*Costruzioni di muratura – Modellazione, sicurezza sismica e conservazione di edifici ordinari e monumentali*" presso Sapienza Università di Roma (Luglio, Ottobre, Novembre 2009, Roma, Italia) (documento allegato)

Titoli VALUTABILI

- Laurea triennale in Scienze dell'Architettura, conseguita il 30/09/2004 presso l'Istituto Universitario di Architettura di Venezia (IUAV), con votazione 110/110

- Laurea Magistrale in Architettura – Progettazione Strutturale e Riabilitazione (classe 4/S), conseguita il 23/04/2008 presso la facoltà di Architettura "Ludovico Quaroni" dell'Università di Roma Sapienza, con votazione 110/110 cum laude

■ **Organizzazione, direzione e coordinamento di gruppi di ricerca nazionali e internazionali, o partecipazione ad essi**

- Progetto Avvio alla Ricerca 2015 tipologia 2 - prot. n. 0051269 - dal titolo *"Analytical and numerical control of global bifurcations in atomic force microcantilevers",* Responsabile della Ricerca

- Progetto di Ricerca di Università, Sapienza Università di Roma, Anno 2016 dal titolo: "*Innovative integrated approaches for damage identification in builidings*", partecipante

- PRIN 2015 - No. 2015JW9NJT - dal titolo "*Advanced mechanical modeling of new materials and structures for the solution of 2020 Horizon challenges*", partecipante

- Progetto di Ricerca di Università, Sapienza Università di Roma, Anno 2015 - prot. C26A15R99X - dal titolo: "*Exploring and exploiting nonlinear dynamics to improve processes and design of mechanical/structural systems*", partecipante

- Progetto di Ricerca di Università, Sapienza Università di Roma, Anno 2014 - prot. C26A144ZXP - dal titolo: "*Modeling and nonlinear dynamics-based design of systems and structures from macro- to nano-mechanics*", partecipante

Titoli VALUTABILI

- Progetto AWARDS di Università, Sapienza Università di Roma, Anno 2013 - prot. C26H13EFZ4 - dal titolo: "*Modeling and nonlinear dynamics-based design of systems and structures from macro- to nano-mechanics*", partecipante

- Progetto di Ricerca di Università, Sapienza Università di Roma, Anno 2012 - prot. C26A12R2L2 - dal titolo: "*Dinamica nonlineare e controllo di sistemi meccanici e strutturali*", partecipante

- Progetto di Ricerca di Università, Sapienza Università di Roma, Anno 2011 - prot. C26A11KC9M - dal titolo: "*Dinamica nonlineare e controllo di sistemi meccanici e strutturali*", partecipante

- Progetto di Ricerca di Università, Sapienza Università di Roma, Anno 2010 - prot. C26A104JMP - dal titolo: "*Dinamica nonlineare e controllo di sistemi meccanici e strutturali*", partecipante

- Progetto di Ricerca di Università, Sapienza Università di Roma, Anno 2009 - prot. C26A09KRXA - dal titolo: "*Dinamica nonlineare e controllo di sistemi meccanici e strutturali*", partecipante

- Progetto di Ricerca di Facoltà, Ateneo Federato delle Scienze umane, Arti e Ambiente, Anno 2009 - prot. C26F09TT89 - dal titolo: "*Nonlinearità e complessità nelle scienze e in architettura*", partecipante

- Progetto di Ricerca di Università, Sapienza Università di Roma, Anno 2008 - prot. C26A08CZ5J - dal titolo: "*Modelli ridotti in dinamica nonlineare e controllo di sistemi strutturali*", partecipante

■ Relatore a congressi e convegni nazionali e internazionali

- Settimi V., Trovalusci P., Rega G., Dispersion features in a model of elastic bar with microcracks derived from a generalized continuum formulation, *AIMETA 2019- XXIV Congresso Associazione Italiana di Meccanica Teorica e Applicata*, 15–19 Settembre 2019, Roma, Italia.

- Settimi V., Trovalusci P., Rega G., Wave propagation in a microcracked elastic bar using a generalized continuum formulation, *ICoNSoM 2019 - International Conference on Nonlinear Solid Mechanics*, 16–19 Giugno 2019, Roma, Italia.

- Settimi V., Rega G., Saetta E., Nonlinear dynamic effects of different thermal sources in thermomechanically coupled plate via third-order model, *NODYCON 2019 - First International Nonlinear Dynamics Conference*, 17–20 Febbraio 2019, Roma, Italia.

- Settimi V., Rega G., Effects of thermomechanical coupling in laminated plates with different thermal boundary conditions, *GADeS 2018 - VII Riunione del Gruppo AIMETA di Dinamica & Stabilità*, 20-21 Settembre 2018, Cagliari, Italia.

- Settimi V., Saetta E., Rega G., Exploiting global dynamics to investigate the effects of thermomechanical coupling in laminated plates, *ICCM 2018 - 9th International Conference on Computational Methods*, 6–10 Agosto 2018, Roma, Italia.

- Settimi V., Rega G., Saetta E., Unveiling transient to steady effects in reduced order models of thermomechanical plates via global dynamics, *ENOLIDES 2018 - IUTAM Symposium on Exploiting Nonlinear Dynamics for Engineering Systems*, 15–19 Luglio 2018, Novi Sad, Serbia.

- Settimi V., Romeo F., Dynamic regimes in nonlinearly coupled electromechanical system, *ESMC 2018 - 10th European Solid Mechanics Conference*, 2–6 Luglio 2018, Bologna, Italia.

Titoli VALUTABILI

- Settimi V., Saetta E., Rega G., Thermomechanical coupling and transient to steady global dynamics of laminated plates, *WMDP 2018– Workshop on Recent Advances on Mechanics, Dynamics Systems, Probability Theory*, 5-6 Marzo 2018, Palermo, Italia.

- Saetta E., Settimi V., Rega G., Nonlinear vibrations of symmetric cross-ply laminates via thermomechanically coupled reduced order models, *EURODYN 2017 – X International Conference on Structural Dynamics*, 10-13 Settembre 2017, Roma, Italia.

- Settimi V., Saetta E., Rega G., Effects of the thermomechanical coupling on the nonlinear dynamics of a reduced order model of composite plate, *AIMETA 2017- XXIII Congresso Associazione Italiana di Meccanica Teorica e Applicata*, 4–7 Settembre 2017, Salerno, Italia.

- Settimi V., Saetta E., Rega G., Passive/active thermal dynamics in the coupled nonlinear vibrations of laminated plates, *ENOC 2017 – 9th European Nonlinear Dynamics Conference*, 25-30 Giugno 2017, Budapest, Ungheria.

- Settimi V., Rega G., Response robustness and safety against jump to contact in AFMs controlled via different techniques, *GADeS 2016 - IV Riunione del Gruppo AIMETA di Dinamica & Stabilità*, 15-16 Settembre 2016, Brescia, Italia.

- Settimi V., Rega G., Lenci S., Control of global bifurcations in a noncontact atomic force microcantilever, *CSNDD 2016 - Third International Conference on Structural Nonlinear Dynamics and Diagnosis*, 23-25 Maggio 2016, Marrakech, Marocco.

- Settimi V., Rega G., Dynamical integrity of noncontact AFM with external feedback control, *Euromech Colloquium 562 – Stability and Control of Nonlinear Vibrating Systems*, 24–28 Maggio 2015, Sperlonga, Italia.

- Settimi V., Rega G., Lenci S., Global control of a noncontact atomic force microcantilever, *AIMETA 2015 - XXII Congresso Associazione Italiana di Meccanica Teorica e Applicata*, 14–17 Settembre 2015, Genova, Italia.

- Settimi V., Rega G., External feedback control of a noncontact AFM and its effects on global dynamics, *AIMETA 2015 - XXII Congresso Associazione Italiana di Meccanica Teorica e Applicata*, 14–17 Settembre 2015, Genova, Italia.

- Settimi V., Rega G., Ongoing studies on local and global control of AFMs, *GADeS 2014 - III Riunione del Gruppo AIMETA di Dinamica & Stabilità*, 16-17 Ottobre 2014, Firenze, Italia.

- Settimi V., Rega G., Controlling local and global dynamics of noncontact atomic force microscopes, *ENOC 2014 – 8th European Nonlinear Dynamics Conference*, 6-11 Giugno 2014, Vienna, Austria.

- Settimi, V., Rega, G., Numerical Analyses in the Nonlinear Dynamics and Control of Microcantilevers in Atomic Force Microscopy, *GIMC-GMA 2014 - XX Convegno Italiano di Meccanica Computazionale*, 11–13 Giugno 2014, Cassino, Italia.

- Settimi V., Rega G., Influence of the external feedback control on the bifurcation and escape scenario of a single-mode model of noncontact AFM. *AIMETA 2013 - XXI Congresso Associazione Italiana di Meccanica Teorica e Applicata*, 17–20 Settembre 2013, Torino, Italia.

- Settimi V., Rega G., Dinamica nonlineare e controllo di microscopi a forza atomica nocontact, *GADeS 2012 - I Riunione del Gruppo AIMETA di Dinamica & Stabilità*, 19 Ottobre 2012, Roma, Italia.

Titoli VALUTABILI

- Settimi V., Rega G., Bifurcations, basin erosion and dynamic integrity in a single-mode model of noncontact atomic force microscopy, *CSNDD 2012 - International Conference on Structural Nonlinear Dynamics and Diagnosis*, 30 Aprile-2 Maggio 2012, Marrakech, Marocco.

Premi e riconoscimenti nazionali e internazionali per attività di ricerca

- Premio GADeS 2016 per la migliore tesi di dottorato, GADeS - Gruppo AIMETA di Dinamica e Stabilità con la seguente motivazione: *"for the excellent work done in the field of nonlinear dynamics of Atomic Force Microscope, for the detailed and extensive analysis of the bifurcations and control of these interesting and technologically advanced devices, and for the important results obtained with a remarkable personal contribution of the candidate, that certainly will contribute to the advance of knowledge in the field of dynamics and stability of structures and mechanical systems".* (documento allegato)

Titoli VALUTABILI

Roma, 11 Gennaio 2020

Decreto Rettore Università di Roma Sapienza n.3615/2019 del 22/11/2019

Valeria Settimi

Curriculum Vitae

PART I - General Information

PART II - Education

2013 **Phd in Structural Engineering**, *Sapienza University of Rome*, Rome, *Result – Excellent*.
Title of the thesis: "Bifurcation scenarios, dynamical integrity and control of noncontact Atomic Force Microscope", tutor Professor Giuseppe Rega.

2008 **Master Degree in Architecture, Structural Design and Rehabilitation**, *Sapienza University of Rome*, Rome, *Result – 110/110 cum laude*.

2004 **Bachelor Degree in Architecture**, *IUAV Institute of Venice*, Venice, *Result – 110/110*.

PART III - Appointments

IIIA - Academic Appointments

2012–2018 **Postdoc fellow in SSD-ICAR/08**, *Department of Structural and Geotechnical Engineering, Sapienza University of Rome*, Rome.
Title of research: "Modeling and nonlinear dynamics of Atomic Force Microscopes".

IIIB - Conference and Mini-symposia Organization

2019 Member of the Local Organizing Committee of the NODYCON 2019 - *First International Nonlinear Dynamics Conference*, held in Rome on February 17-20.

2018 Organizer of the Mini-symposium entitled *Computational Methods in Nonlinear Dynamics Problems* at ICCM2018 - 9th *International Conference on Computational Methods*, to be held in Rome on August 6-10.

2017 Chair at the Mini-symposium on *Vibration Control and Mitigation (MS12)* of the EURODYN 2017 - *X International Conference on Structural Dynamics*, held in Rome on September 10-13.

2017 Member of the Local Organizing Committee of the EURODYN 2017 - *X International Conference on Structural Dynamics*, held in Rome on September 10-13.

2012 Member of the Local Organizing Committee of the *XXXII Congress of the History of Physics and Astronomy*, held in Rome on September 27-29.

2011 Member of the Local Organizing Committee of the ENOC 2011 - 7th *European Nonlinear Dynamics Conference*, held in Rome on July 24-29.

2009 Member of the Local Organizing Committee of the EUROMECH Colloquium 503: *Nonlinear Normal Modes, Dimension Reduction and Localization in Vibrating Systems*, held in Frascati (Rome) on September 27 - October 2.

IIIC - Journal Peer-Reviewer

2012–to date Nonlinear Dynamics, Journal of Sound and Vibration, Meccanica, Journal of Vibration and Control, Journal of Theoretical and Applied Mechanics, International Journal of Non-Linear Mechanics, Physics Letters A, Journal of the Franklin Institute, AIAA Journal, Communications in Nonlinear Science and Numerical Simulation, Journal of Applied Mechanics, ASME Journal of Computational and Nonlinear Dynamics.

PART IV - Teaching Experience

2018–2019 Adjunct professor for the course of Structural Mechanics (8 CFU - Single Cycle Degree in Architecture) at the Faculty of Architecture of Sapienza University of Rome.

2017–2018 Teaching support for the course of Structural Mechanics held by Prof. Francesco Romeo at the Faculty of Architecture of Sapienza University of Rome.

2015–2017 Teaching support for the course of Structural Mechanics held by Prof. Giuseppe Rega and Prof. Danilo Capecchi at the Faculty of Architecture of Sapienza University of Rome.

Titoli VALUTABILI

2013–2017 Teaching support for the course of Statics and Structural Mechanics held by Prof. Francesco Romeo at the Faculty of Architecture of Sapienza University of Rome.

2009–2011 Teaching support for the course of Structural Mechanics held by Prof. Giuseppe Rega at the Faculty of Architecture of Sapienza University of Rome.

PART V - Society memberships, Awards and Honors

2019 **National Scientific Qualification (ASN) to function as Associate Professor for the Academic Discipline ICAR-08/B2 - Structural Mechanics**, The qualification was granted with unanimous consent of the Examination Committee, in response to the application to the second round of the call MIUR-ASN 2018-2020.

2016 GADeS 2016 award for the best Phd Thesis - GADeS: Gruppo AIMETA di Dinamica e Stabilitá - Motivation: *"for the excellent work done in the field of nonlinear dynamics of Atomic Force Microscope, for the detailed and extensive analysis of the bifurcations and control of these interesting and technologically advanced devices, and for the important results obtained with a remarkable personal contribution of the candidate, that certainly will contribute to the advance of knowledge in the field of dynamics and stability of structures and mechanical systems"*

2016 CISM - International Centre for Mechanical Sciences - grant for attendance to the CISM-AIMETA School *"Global Nonlinear Dynamics for Engineering Design and System Safety"*, June 13–17, Udine, Italy.

2015 CISM - International Centre for Mechanical Sciences - grant for attendance to the CISM-AIMETA School *"The Art of Modeling Mechanical Structures"*, July 27–31, Udine, Italy.

2009 SICON - Stability, Identification and COntrol of Nonlinear dynamical systems - Marie Curie Fellowship for attendance to the Training Course in *Advanced Nonlinear Dynamics and Chaotic Dynamical Systems (TC4)*, March 29–April 4, Lyon, France.

2009 SICON - Stability, Identification and COntrol of Nonlinear dynamical systems - Marie Curie Fellowship for attendance to the Training Course in *Vibration Testing, Identification of Linear and Nonlinear Systems (TC5)*, July 6–10, Liège, Belgium.

2009 SICON - Stability, Identification and COntrol of Nonlinear dynamical systems - Marie Curie Fellowship for attendance to the SICON Final Conference in *Nonlinear Dynamics, Stability, Identification and Control of Systems and Structures (FC)*, September 21–25, Rome, Italy.

Titoli VALUTABILI

PART VI - Funding Information

2016 University Research Project, Sapienza University of Rome *Innovative integrated approaches for damage identification in buildings*, participant.

2015 Startup Research Project, Sapienza University of Rome -prot. 0051269- *Analytical and numerical control of global bifurcations in atomic force microcantilevers*, research leader.

2015 PRIN 2015 -No. 2015JW9NJT- *Advanced mechanical modeling of new materials and structures for the solution of 2020 Horizon challenges*, participant.

2015 University Research Project, Sapienza University of Rome -prot. C26A15R99X- *Exploring and exploiting nonlinear dynamics to improve processes and design of mechanical/structural systems*, participant.

2014 University Research Project, Sapienza University of Rome -prot. C26A144ZXP- *Modeling and nonlinear dynamics-based design of systems and structures from macro- to nano-mechanics*, participant.

2013 University AWARDS Project, Sapienza University of Rome -prot. C26H13EFZ4- *Modeling and nonlinear dynamics-based design of systems and structures from macro- to nano-mechanics*, participant.

2012 University Research Project, Sapienza University of Rome -prot. C26A12R2L2- *Dinamica nonlineare e controllo di sistemi meccanici e strutturali*, participant.

2011 University Research Project, Sapienza University of Rome -prot. C26A11KC9M- *Dinamica nonlineare e controllo di sistemi meccanici e strutturali*, participant.

2010 University Research Project, Sapienza University of Rome -prot. C26A104JMP- *Dinamica nonlineare e controllo di sistemi meccanici e strutturali*, participant.

2009 University Research Project, Sapienza University of Rome -prot. C26A09KRXA- *Dinamica nonlineare e controllo di sistemi meccanici e strutturali*, participant.

2009 Faculty Research Project, Federal University of Human Sciences, Art and Environment, Sapienza University of Rome -prot. C26F09TT89- *Nonlinearitá e complessitá nelle scienze e in architettura*, participant.

2008 University Research Project, Sapienza University of Rome -prot. C26A08CZ5J- *Modelli ridotti in dinamica nonlineare e controllo di sistemi strutturali*, participant.

PART VII - Research Activities

VIIA - Research Experiences

2011 Visiting PhD at the Technion University of Haifa, Israel, with the research group of Professor Oded Gottlieb (September to December).

2019 Speaker at the XXIV Congress of the Italian Association of Theoretical and Applied Mechanics (AIMETA 2019), September 15-19, Rome, Italy.

2019 Speaker at the International Conference on Nonlinear Solid Mechanics (ICoNSoM 2019), June 16-19, Rome, Italy.

2019 Speaker at the First International Nonlinear Dynamics Conference (NODYCON 2019), February 17-20, Rome, Italy.

2018 Speaker at the VII Meeting of the AIMETA Dynamics and Stability Group (GADeS 2018), September 20-21, Cagliari, Italy.

2018 Invited Speaker at the 9th International Conference on Computational Methods (ICCM 2018), August 6–10, Rome, Italy.

2018 Speaker at the IUTAM Symposium on Exploiting Nonlinear Dynamics for Engineering Systems (ENOLIDES 2018), July 15–19, Novi Sad, Serbia.

2018 Speaker at the 10th European Solid Mechanics Conference (ESMC 2018), July 2–6, Bologna, Italy.

2018 Speaker at the Workshop on Recent Advances on Mechanics, Dynamics Systems, Probability Theory (WMDP 2018), March 5-6, Palermo, Italy.

2017 Speaker at the X International Conference on Structural Dynamics (EURODYN 2017), September 10-13, Rome, Italy.

2017 Speaker at the XXIII Congress of the Italian Association of Theoretical and Applied Mechanics (AIMETA 2017), September 4-7, Salerno, Italy.

2017 Speaker at the 9th European Nonlinear Dynamics Conference (ENOC 2017), June 25-30, Budapest, Hungary.

2016 Speaker at the V Meeting of the AIMETA Dynamics and Stability Group (GADeS 2016), September 15-16, Brescia, Italy.

2016 Speaker at the Third International Conference on Structural Nonlinear Dynamics and Diagnosis (CSNDD 2016), May 23-25, Marrakech, Morocco.

2015 Speaker at the XXII Congress of the Italian Association of Theoretical and Applied Mechanics (AIMETA 2015), September 14–17, Genoa, Italy.

2015 Speaker at the Euromech Colloquium 562 - Stability and Control of Nonlinear Vibrating Systems, May 24–28, Sperlonga, Italy.

2014 Speaker at the III Meeting of the AIMETA Dynamics and Stability Group (GADeS 2014), October 16-17, Florence, Italy.

2014 Speaker at the 8th European Nonlinear Dynamics Conference (ENOC 2014), July 6–11, Vienna, Austria.

2014 Speaker at the XX National Congress in Computational Mechanics (GIMC-GMA 2014), June 11–13, Cassino, Italy.

2013 Speaker at the XXI Congress of the Italian Association of Theoretical and Applied Mechanics (AIMETA 2013), September 17–20, Turin, Italy.

2012 Speaker at the I Meeting of the AIMETA Dynamics and Stability Group (GADeS 2012), October 19, Rome, Italy.

2012 Speaker at the International Conference on Structural Nonlinear Dynamics and Diagnosis (CSNDD 2012), April 30–May 2, Marrakech, Morocco.

VIIB - Research Interests

The scientific research concerns the analysis of nonlinear mechanical systems at the macro and nano scale, developed by means of analytical and numerical approaches. In particular, the main topics that have been developed are:

- **Noncontact Atomic Force Microscopes (AFM)**: (i) Bifurcation scenarios and stability charts to analyze the influence of the most significant parameters (ii) Basins of attraction and erosion profiles to characterize the sensitivity to changes in the system initial conditions and evaluate the dynamical integrity
- **Local control of cantilever vibrations through a feedback technique**: (i) Formulation of a reduced model of noncontact AFM with external feedback control (ii) High order multiple scale asymptotic analysis of the system dynamics and stability in primary resonance condition (iii) Numerical investigation of the strongly nonlinear dynamics to assess the effect of the feedback control on the system response
- **Control of global bifurcations for Hamiltonian and non Hamiltonian systems**: (i) Stable

and unstable manifolds of the main saddles of a reduced model of noncontact AFM and detection of the relevant global bifurcations (ii) Analytical control based on Melnikov method of hilltop saddle bifurcations (iii) Development of a numerical control procedure for global bifurcations involving generic saddles to increase the system dynamical robustness

- **Thermomechanical coupling in laminated plates**: (i) Local and global nonlinear dynamics of a reduced model of laminated plate with thermomechanical coupling (ii) Effects of slow-fast dynamics in transient and steady state response under passive and active thermal regimes
- **Electro-magneto-mechanical systems**: (i) Bifurcation scenario and multistability regions of a linear oscillator nonlinearly coupled through a magnet to a linear electric circuit (ii) Analytical investigation by means of high order multiple scale method of the critical and post-critical behavior in electrical resonance conditions
- **Wave propagation in microstructured materials**: (i) Analytical study of wave propagation in a monodimensional homogenized model of bar with distributed microcracks, derived from a generalized continuum formulation which accounts for the microstructure presence by adding a micro-displacement to the standard macro-displacement (ii) Parametric analysis of the damage effects on the behavior of the propagating waves, under free and forced propagation regimes

PART VIII - Publications

The production consists of 21 scientific publications, divided in 11 international journals, 6 proceedings journals, 2 book chapters and 2 peer-reviewed conference proceedings.

VIIIA - Bibliometric Indexes

Number of Publications	18 (10 in international journals, 6 in proceedings journals, 2 as book chapter) (source Scopus)
Total Impact Factor	26.814 (Articles Only)
Total Citations	99 (source Scopus), 85 (source Web of Science), 126 (source Google Scholar)
Average Citations per Product	5.5 (source Scopus), 5 (source Web of Science), 6.3 (source Google Scholar)
H Index	6 (source Scopus), 5 (source Web of Science), 6 (source Google Scholar)

VIIIB - International Journals

2019 Saetta, E., Settimi, V., Rega, G., Minimal thermal modeling of two-way thermomechanically coupled plates for nonlinear dynamics investigation, *Journal of Thermal Stresses*, 1–27,DOI: 10.1080/01495739.2019.1704669. IF 2.943.

2019 Settimi, V., Trovalusci, P., Rega, G., Dynamical properties of a composite microcracked bar based on a generalized continuum formulation, *Continuum Mechanics and Thermodynamics*, 31: 1627–1644,DOI: 10.1007/s00161-019-00761-7. IF 1.758. Citations 1 (source Scopus)

2018 Settimi V., Romeo F., High order asymptotic dynamics of a nonlinearly coupled electromechanical system, *Journal of Sound and Vibration*, 432: 470–483, DOI: 10.1016/j.jsv.2018.06.046. IF 3.123. Citations 0 (source Scopus)

2018 Settimi V., Romeo F., Dynamic regimes of a nonlinearly coupled electromechanical system, *International Journal of Non-Linear Mechanics*, 103: 68–81, DOI: 10.1016/j.ijnonlinmec.2018.04.008. IF 2.225. Citations 1 (source Scopus)

2018 Settimi V., Rega G., Saetta E., Avoiding/inducing dynamic buckling in a thermomechanically coupled plate: a local and global analysis of slow/fast response, *Proceedings of the Royal Society A*, 474: 20180206 (24 pp.), DOI: 10.1098/rspa.2018.0206. IF 2.818. Citations 4 (source Scopus)

2018 Settimi V., Saetta E., Rega G., Local and global nonlinear dynamics of thermomechanically coupled composite plates in passive thermal regime, *Nonlinear Dynamics*, 93: 167–187, DOI: 10.1007/s11071-017-3648-1. IF 4.604. Citations 6 (source Scopus)

2016 Settimi, V., Rega, G., Exploiting global dynamics of a noncontact atomic force microcantilever to enhance its dynamical robustness via numerical control, *International Journal of Bifurcation and Chaos*, 26 (7): 1630018, DOI: 10.1142/S0218127416300184, Feature Article. IF 1.329. Citations 9 (source Scopus)

2016 Settimi, V., Rega, G., Global dynamics and integrity in noncontacting Atomic Force Microscopy with feedback control, *Nonlinear Dynamics*, 86(4): 2261–2277, DOI: 10.1007/s11071-016-2620-9. IF 3.464. Citations 10 (source Scopus)

2016 Settimi, V., Rega, G., Influence of a locally-tailored external feedback control on the overall dynamics of a noncontact AFM model, *International Journal of Non-Linear Mechanics*, 80: 144–159, DOI:10.1016/j.ijnonlinmec.2015.05.010. IF 2.074. Citations 8 (source Scopus)

2015 Settimi, V., Gottlieb, O., Rega, G., Asymptotic analysis of a noncontact AFM microcantilever sensor with external feedback control, *Nonlinear Dynamics*, 79 (4): 2675–2698, DOI: 10.1007/s11071-014-1840-0. IF 3.0. Citations 15 (source Scopus)

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