Ivan Bartoli
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Drexel University, 3141 Chestnut Street Curtis Hall 251, Philadelphia, PA 19104
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Education

- PhD Structural Engineering, Nov 2007, University of California, San Diego, CA
  Dissertation: ***Structural Health Monitoring by Ultrasonic Guided Waves***, Faculty advisor Francesco Lanza di Scalea.
- Doctorate of Research (Dottorato di Ricerca), Mechanics of Structures, 2003-2006, University of Bologna UNIBO, Bologna (Italy)
  Dissertation: ***Numerical prediction of the dynamic behavior of structural components and estimation of mechanical properties***, Faculty advisor E. Viola.
- M.S., GPA-3.92, Structural Engineering, 2005, UCSD
- Laurea, Civil Engineering (specialization in Structural Engineering), 100/100 magna cum laude, 2001, University of Bologna, UNIBO, Italy
  Thesis: ***Identification of elastic constants for fiber reinforced composite materials***.
  Advisor: E. Viola, Chair of the Doctorate of Research in Mechanics of Structures, University of Bologna, Italy

Academic and Professional Interests

- Identification of mechanical properties in composite materials
- Finite element modeling for transient stress wave propagation
- Nondestructive testing/evaluation and structural health monitoring
- Signal processing for real-time prognosis of structures
- Implementation of embedded sensor network for health monitoring of civil, mechanical and aerospace structures.
- Inspection of civil and aerospace infrastructures

Professional/ Teaching/ Employment Experience

- Assistant Professor, Dept. of Civil Architectural and Environmental Engineering, Drexel University, Philadelphia, PA.
- Consultant, Avanti Tech. LLC (June 2009-Sept 2010)
- Assistant Project Scientist Step IV, Dept. of Structural Engineering, University of California San Diego.
- Ph.D., Dept. of Structural Engineering, University of California San Diego, (2004–Nov 2007).
- Master of Science, UCSD (2004–2005).
- Teaching Assistant, Department of Structural Engineering, UCSD: taught NDE & Structural Health Monitoring (Spring 2006).
- Doctorate of Research in “Mechanics of Structures” (Italian Ph.D.), Department of Structural Engineering, University of Bologna (2003–2005).
- Teaching Assistant, Department of Structural Engineering, University of Bologna: taught Solid Mechanics, Structural Dynamics (2003).
- Part time architectural and structural consultant engineer, construction yard, Rimini, Italy (2000–2002)

- Private tutoring (Physics, Calculus, Geometry, Strength of Materials) at the undergraduate level (2000–2002)

Honors and Awards

- Pennsylvania Concrete Masonry Association Award to participate at the 11th North American Masonry Society (2011).
- ASNT Faculty award: ***Development of Undergraduate/Graduate Course CIVE 615 "Infrastructure Condition Evaluation"*** Educational, Bartoli CAEE (PI), Kontsos MEM (coPI), American Society of Nondestructive Testing (2011).
- Jacobs School of Engineering Research Expo Honorable Mention for the Poster "***Structural Health Monitoring of Cables and Tendons by Embedded Sensors and Ultrasonic Guided Waves***" (2007).
- Recipient of the 2006 Fellowship Research Award of the American Society for Nondestructive Testing for graduate research on "***Built-in system for the structural health monitoring of adhesively-bonded components in aerospace structures***", faculty advisor Prof. F. Lanza di Scalea.
- Recipient of the 2004 Fellowship Award in memory of "Albino Nasce' ", Bologna, Italy.
- Scholarship for the research project "***Identification of mechanical parameters for fiber reinforced composite materials***" at the University of Bologna, UNIBO, tutor Prof. A. Di Leo (2002).
- Recipient of the 2002 Fellowship Award of the "ECOMAP scpa" Rome, Italy.
- Italian Professional Engineering license since 2002.

Proposals Submitted

Title	Type	PIs	Source	Date Submitted	$Requested (Drexel)
An Integrated SHM Approach for Damage Quantification	Research Fellowship	Kontsos MEM **Bartoli** CAEE	ASNT	10/14/2011	15,000
An Integrated Health Monitoring Approach for Damage Quantification in Structural "Hot Spots"	Research	**Bartoli** CAEE Kontsos MEM	NSF	10/03/11	394,342
Guided Ultrasonic Waves-based system for the assessment of wastewater conveyance	Research	**Bartoli** CAEE Rizzo Pitt	WERF	10/29/2010	130,229
Development of Undergraduate/Graduate Course CIVE 615 "Infrastructure Condition Evaluation"	Educational	**Bartoli** CAEE Kontsos MEM	ASNT	11/18/2010	8,000
Collaborative Research: GUEMI: A New Paradigm for Structural Health Monitoring of Civil Infrastructures	Research	Rizzo, Pitt **Bartoli**, Drexel Salamone, Buffalo	NSF	02/15/2011	272,758
Catalyzing New International Collaborations: The Use of Life Cycle Assessment (LCA) Methods in Geotechnical Engineering	Research/ Workshop	Gallagher, Spatari, **Bartoli**	NSF	03/01/2011	31,870
INDP: A Cyber-Physical Laboratory for Multi-Disciplinary Learning and Research	Educational	Irfanoglu, Purdue Univ. **Bartoli**, Drexel	NSF	07/14/2011	15,000
Condition Assessment of Bridge Post-Tensioning and Stay Cable Systems Using NDE Methods	Research	**Bartoli**, Hsuan, Aktan (Drexel), Rizzo (Pitt), Veletzos (Merrimack), Smart Structure	NCHRP - TRB	09/14/2011	373,144

		(Rantoul, IL), AID (Hamilton, NJ)			
An Integrated SHM Approach for Damage Quantification	Research	Vanniamparambil, Kontsos, MEM **Bartoli** CAEE	American Society of Nondestructive Testing	10/14/2011	15,000
Novel Optico-Acoustic Sensing System for Intelligent Structural Monitoring	Research	Kontsos, MEM **Bartoli** CAEE	NSF	2/26/2012	374,527
Condition Assessment of Bridge Post-Tensioning and Stay Cable Systems Using NDE Methods	Research	**Bartoli**, Hsuan, Aktan (Drexel), Rizzo (Pitt), Veletzos (Merrimack) , Attanayake (Western Michigan), Smart Structure (Rantoul, IL), AID (Hamilton, NJ)	NCHRP - TRB	02/22/2012	383,213

Funded Research Projects

- "Catalyzing New International Collaborations: The Use of Life Cycle Assessment (LCA) Methods in Geotechnical Engineering Research/Workshop" (PI P. Gallagher, coPIs S. Spatari, I. Bartoli, NSF 08/01/2011 31,870)
- "Development of Undergraduate/Graduate Course CIVE 615 Infrastructure Condition Evaluation via NDT" (PI with A. Kontsos as coPI, American Society of Nondestructive Testing, $8,000 8/1/2011 - 7/31/2012).
- "On-line high-speed rail defect detection" (Co-Investigator with F. Lanza di Scalea as PI, Department of Transportation, Federal Railroad Administration, Amendment 3, $237,794, 04/01/05 - 04/01/06)
- "On-line high-speed rail defect detection" (Co-Investigator with F. Lanza di Scalea as PI, Department of Transportation, Federal Railroad Administration, Amendment 4, $200,000, 04/01/06 - 04/01/07)

Invited Seminars and Presentations

- "Structural Health Monitoring in Civil Engineering by Ultrasonic Guided Waves" Civil Engineering Department, Temple University, Philadelphia PA, April 2011.
- "Structural Health Monitoring in Civil Structures by Ultrasonic Guided Waves" Department of Civil Engineering, North Carolina University, Rayleigh, NC April 2010.
- "Structural Health Monitoring in Civil Structures by Ultrasonic Guided Waves" Department of Civil, Architectural and Environmental Engineering, Drexel University, Philadelphia, PA, April 2010.
- "Structural Health Monitoring in Civil Structures by Ultrasonic Guided Waves" Department of Civil Environmental Engineering, Catholic University of America, Washington D.C., March 2010.
- "Structural Health Monitoring in Aerospace Structures by Ultrasonic Guided Waves" Department of Aerospace Engineering, Georgia Tech, Atlanta, Georgia April 2009.
- "Numerical Prediction of the Dynamic Behavior of Composite Structural Components and Estimation of Mechanical Properties" Department of Structural Engineering, University of California San Diego, San Diego, California April 2008.

Editorial/Review Activities

- Guest Editor: Special Issue for Mathematical Problems in Engineering: "New Strategies and Challenges in SHM for Aerospace and Civil Structures"
- Reviewer: Journal of Intelligent Material Systems and Structures, Journal of Sound and Vibration, Journal of the Acoustical Society of America, NDT&E International, International Journal of Structural Health Monitoring, Smart Materials and Structures, Structure and Infrastructure Engineering, Journal of Infrastructure Systems, Journal of Nondestructive Evaluation, Shock and Vibration, Ultrasonics
- Research Proposal reviewer for US National Science Foundation, CMMI Program
- Assessment of research proposal for the National Research Foundation, Competitive Support for Unrated Researchers (CSUR) Program, South Africa.

Courses Taught

Course #	Year & Term		Credits	# of Students	Course Title
CIVE 615-501	2011	FALL	3	8	Infrastructure Cond. Eval.
CIVE 702-501	2011	WINTER	3	25	Structural Analysis II
CIVE 375-001	2011	SPRING	3	9	Structural Material Behavior
CIVE 790-504	2011	SPRING	3	22	Adv. Mechanics of Materials II
CIVE 615-501	2012	FALL	3	25	Infrastructure Cond. Eval.
CIVE 375-001	2012	WINTER	3	48	Structural Material Behavior

Lectures on CIVE 201 "Introduction to Structures"
Advisor for several students for CIVE 477 Senior Seminar Paper
Advisor for Senior Design

Professional Services

Students mentoring

Undergraduate students: Gabriel Jen, Robert Phillips, (NDE Laboratory at UCSD, Advisor Prof. Lanza di Scalea), Evelyn Ochoa (Structural Engineering Department, UCSD)

Independent Research: Neha Jaffry, Colin Henner, Mustafa Furkan, Michael Wilson

M.S. students: Andrea Biserni (graduated on 2002), Massimo Montuschi (graduated on 2002), Francesco Galati (graduated on 2003), University of Bologna, Italy.
Marzia Mezzanotte, Patrizia Di Leo, Claudio Nucera (graduated on 2008), University of Palermo, Italy

PhD students: Prashanth Abraham Vanniamparambil, Fuad Khan, Elisa Sorrivi, visiting Scholar at UCSD, Doctoral Student at University of Bologna, Italy Salvatore Salamone, visiting Scholar at UCSD, Doctoral Student at University of Palermo, Italy

Tutoring at the Alma Mater Studiorum (Bologna) in Strength of materials

Member of the following examination committees:

Qualifying examination of the Engineers Professional Association (Bologna)

Structural Mechanics (Prof. E. Viola, Prof. A. Di Leo, Prof. G. Pascale, DISTART, Faculty of Engineering University of Bologna)

Laboratory Experience

- Use of ultrasonic and optical devices, strain gages, accelerometers
- Use of impact-echo and modal analysis instrumentation
- Use of oscilloscopes, high-power ultrasonic amplifiers, commercial ultrasonic transducers, National Instruments™ PXI
- Inspection of concrete structural components, pipelines, bars, strands, composite and metallic plates, railroad tracks by means of ultrasonic techniques

Recent Collaborators and Advisors

- Advanced Infrastructure Design, Hamilton, NJ
- Pennsylvania Concrete Masonry Association, Lebanon, PA
- Xiaofeng "Bill" Zhang, Assistant Professor, Temple University, Philadelphia, PA.
- Hyonny Kim, Associate Professor, University of California San Diego, CA
- Piervincenzo Rizzo, Assistant Professor, University of Pittsburgh, PA
- Salvatore Salamone, Assistant Professor, University at Buffalo, NY
- Branko Glisic, Assistant Professor, Princeton University, New Jersey
- Raimondo Betti, Professor, Columbia University, New York, NY
- Antonios Kontsos, Assistant Professor, MEM, Drexel University
- Dr. M. Fateh (Program manager), Dr. Gary Carr (Chief), Office of Railroad Development, U.S. Department of Transportation, Federal Railroad Administration.
- Dr. Charles S. Sikorsky (Program manager), Division of Engineering Services, California Department of Transportation.
- Prof. F. Lanza di Scalea (Ph.D. advisor), Structural Engineering Dept., UCSD
- Dr. H. Matt, ATA Engineering, San Diego CA.
- Prof. E. Viola, Prof. A. Di Leo, Prof. A. Marzani, G. Castellazzi and Prof. G. Pascale (collaborators), Structural Engineering Dept., University of Bologna, Italy
- Andrew Colombo, National Research Council of Canada
- John Popovics, The University of Illinois

Publications

Co-author of over eighty peer-reviewed journal and conference papers (complete list attached to the CV)

Computer Skills

- Extensive MATLAB programming. Proficiency of MATLAB toolboxes such as the Wavelet Transform Toolbox and Partial Differential Equation Toolbox.
- Extensive use of SOLID WORKS
- Experience with C++ and FORTRAN languages
- Experience with computer software applications including Autocad, Office, Maple, NI-LabVIEW
- Finite Element packages ABAQUS, SAP, ANSYS
- Proficiency with Windows operating system

Language Skills

- Italian

- English
- Spanish: basic oral and spoken comprehension

Personal Information

Born in Rimini (Italy) on June 30, 1975
Italian citizenship, US permanent resident (Green Card)
Single
Hobbies: reading (Italian and English newspapers), cooking and eating, sports (surfing, beachvolley, swimming, soccer, tennis), traveling whenever money and time are available.

PUBLICATIONS

BOOK CHAPTERS

1. Lanza di Scalea, F., Rizzo, P., Coccia, S., **Bartoli, I.** and Fateh.M. "On-Line High-speed Rail Defect Detection – Phase III," Chapter 4 of Technology in Rail Transport Management, P.S. Ranade, ed., The Icfai University Press, India, pp. 55-65, (2007).

2. Rizzo, P., Coccia, S., **Bartoli, I.,** and Lanza di Scalea, F., "Non-contact Rail Monitoring by Ultrasonic Guided Waves," in Chapter 151 of Encyclopedia of Structural Health Monitoring, C. Boller, F-K. Chang, and Y. Fujino, eds., John Wiley & Sons, Chichester, U.K., pp. 2397-2410, (2009).

3. Lanza di Scalea, F., **Bartoli, I.,** Rizzo, P., Marzani, A., Sorrivi, E., and Viola, E., "Structural Health Monitoring of Multi-wire Strands," in Chapter 151 of Encyclopedia of Structural Health Monitoring, C. Boller, F-K. Chang, and Y. Fujino, eds., John Wiley & Sons, Chichester, U.K., pp. 2487-2503, (2009).

REFERRED JOURNALS.

1. Viola, E., **Bartoli, I.** and Marzani, A. "Boundary Conditions Effect on the Dynamic Instability of Orthotropic Plates," The Journal Scientific Israel-Technological- Advantages, Vol. 5, No. 1, pp. 66-83 (2003).

2. **Bartoli, I.**, Lanza di Scalea, F., Fateh, M. and Viola. E. "Modeling guided wave propagation with application to the long-range defect detection in rail road tracks," NDT & E International, Vol. 38, pp. 325-334 (2005).

3. Rizzo, P., **Bartoli, I.**, Marzani A., and Lanza di Scalea, F., "Defect Classification in Pipes by Neural Networks using Multiple Guided Ultrasonic Wave Features," ASME Journal of Pressure Vessel Technology, Special Issue on the Nondestructive Evaluation of Pipeline and Vessel Structures, Vol. 127, No. 3, pp. 294-303 (2005).

4. Lanza di Scalea, F., Rizzo, P., Coccia, S., **Bartoli, I.**, Fateh, M., Viola, E. and Pascale, G., "Non-Contact Ultrasonic Inspection of Rails and Signal Processing for Automatic Defect Detection and Classification," Insight - Non-Destructive Testing & Condition Monitoring, Vol. 47, No. 6, pp. 346-353 (2005).

5. Lanza di Scalea, F., **Bartoli, I.**, Rizzo, P. and Fateh, M. "High-speed Defect Detection in Rails by Non-contact Guided Ultrasonic Testing," Transportation Research Record, Journal of the Transportation Research Board, No. 1916, pp. 66-77 (2005).

6. Matt, H., **Bartoli, I.** and Lanza di Scalea, F. "Ultrasonic guided wave monitoring of composite wing skin-to-spar bonded joints in aerospace structures," Journal of the Acoustical Society of America, Vol. 118, pp. 2240-2252 (2005).

7. **Bartoli, I.**, Marzani, A., Lanza di Scalea, F., and Viola, E. "Modeling wave propagation in damped waveguides of arbitrary cross-section," Journal of Sound and Vibration, Vol. 295 No. 3-5, pp. 685-707 (2006).

8. Lanza di Scalea, F., Rizzo, P., Coccia, S., **Bartoli, I.**, and Fateh, M., "Laser-Air-Coupled Hybrid Detection in Rail Tracks: Status of FRA Prototype Development at UC San Diego," Transportation Research Record, Journal of the Transportation Research Board, No. 1943, pp. 57-64 (2006).

9. Lanza di Scalea, F., Matt, H. and **Bartoli, I.** "The response of rectangular piezoelectric sensors to Rayleigh and Lamb ultrasonic waves," Journal of the Acoustical Society of America, Vol. 121 pp. 175-187 (2007).

10. Rizzo, P., **Bartoli, I.**, Cammarata M. and Coccia S., "Digital signal processing for rail monitoring by means of ultrasonic guided waves," Insight - Non-Destructive Testing & Condition Monitoring, Vol. 49, No. 6, pp. 327-332 (2007).

11. Lanza di Scalea, F., Matt, H., **Bartoli, I.**, Coccia, S., Park, G. and Farrar, C. "Health Monitoring of UAV wing skin-to-spar joints using guided waves and macro fiber composite transducers," Journal of Intelligent Material Systems and Structures, Vol. 18, 373-388 (2007).

12. Marzani, A., Viola, E., **Bartoli, I.,** Lanza di Scalea, F. and Rizzo, P.A "Semi-analytical finite element formulation for modeling stress wave propagation in axisymmetric damped waveguides," Journal of Sound and Vibration, Vol. 318 No. 3, pp. 488-505 (2008).

13. Sabra, K., Srivastava, A., Lanza di Scalea, F., **Bartoli, I.,** Rizzo, P. and Conti S. "Structural health monitoring by extraction of coherent guided waves from diffuse fields," Journal of the Acoustical Society of America, Vol. 123, No. 1, pp. EL8-EL13 (2008).

14. **Bartoli, I.,** Salamone, S., Phillips, R., Lanza di Scalea, F., Coccia, S. and Sikorsky, C. "Monitoring Prestress Level in Seven-wire Prestressing Tendons by Inter-wire Ultrasonic Wave Propagation," Journal of Advances in Science and Technology – Embodying Intelligence in Structures and Integrated Systems, Vol. 56, pp. 200-205, (2008).

15. Salamone, S., **Bartoli, I.,** Lanza di Scalea, F. and Coccia S. "Temperature Effect on Guided Wave Based Macrofiber Composite Transduction," Materials Evaluation, Vol. 66(10), pp. 1071-1076, 2008.

16. Salamone, S., **Bartoli, I.,** Lanza Di Scalea, F. and Coccia, S. "Guided-wave Health Monitoring of Aircraft Composite Panels under Changing Temperature," Journal of Intelligent Material Systems and Structures, Vol. 20(9), pp. 1079-1090, (2009).

17. Marzani, A., **Bartoli, I. "**High frequency waves propagating in octagonal bars: a low cost computation algorithm," Algorithms, Vol. 2(1), pp. 227-246, (2009).

18. Salamone, S., Fasel, T., **Bartoli, I.**, Srivastava, S., Lanza di Scalea, F., Todd, M. "Structural health monitoring of adhesively-bonded joints in aerospace structures," Materials Evaluation – Special Issue, Accepted for Publication

19. Coccia, S., **Bartoli, I.,** Salamone, S., Phillips, R., Lanza di Scalea, F., Fateh, M., and Carr, G., "Noncontact Ultrasonic Guided Wave Detection of Rail Defects" Transportation Research Record, Journal of the Transportation Research Board, No. 2117, pp. 77-84 (2009).

20. **Bartoli, I.,** Salamone, S., Phillips, R., Lanza di Scalea, F., and Sikorsky, C.S. "Use of interwire ultrasonic leakage to quantify loss of prestress in multiwire tendons," Journal of Engineering Mechanics, Vol. 137, pp. 324-333, (2011).

21. Srivastava, A., **Bartoli, I.,** Salamone, S., and Lanza di Scalea, F., "Higher Harmonic Generation in Nonlinear Waveguides of Arbitrary Cross-Section," Journal of the Acoustical Society of America, Vol. 127(5) pp. 2790-2796 (2010).

22. Salamone, S., **Bartoli, I.,** Di Leo, P., Lanza di Scalea, F., Ajovalasit, A., D'Acquisto, L., Rhymer, J., and Kim, H., "High Velocity Impact Location on Aircraft Panels using Macro-fiber Composite Piezoelectric Rosettes," Journal of Intelligent Materials and Structures, Vol. 21(9) pp. 887-896 (2010).

23. **Bartoli, I.,** Phillips, R., Coccia, S., Srivastava, A., Lanza di Scalea, F., Fateh, M., Carr, G., "Stress Dependence of Ultrasonic Guided Waves in Rails," Transportation Research Record, Journal of the Transportation Research Board, Vol. 2159, pp. 91-97 (2010).

24. Coccia, S., **Bartoli, I.,** Marzani, A., Lanza di Scalea, F., Salamone, S., and Fateh, M., "Numerical and experimental study of guided waves for detection of defects in the rail head," NDT & E International, Vol. 44(1), pp. 93-100, (2011).

25. Salamone, S., **Bartoli, I.**, Phillips, R., Nucera, C., Lanza di Scalea, F., "Health monitoring of Prestressing Tendons in Posttensioned Concrete Bridges," Journal of the Transportation Research Record, Vol. 2220, p 21-27 (2011)

26. Coccia, S., Phillips, R., **Bartoli, I.**, Salamone, S., Lanza di Scalea, F., Fateh, M., Carr, G., (2011). "UCSD/FRA non-contact ultrasonic guidedwave system for rail inspection: an update", Journal of the Transportation Research Board, Vol. 2261, p. 143-147 (2012)

27. **Bartoli I.**, Marzani A., "A low/high frequency combined approach for the identification of mechanical properties of composite structural elements," Theoretical and Applied Mechanics, Special Issue on Contemporary Problems in Mechanics of Solids and Materials, To appear.

28. Vanniamparambil P.A., Bartoli I., Hazeli K., Cuadra J., Schwartz E., Saralaya R. and Kontsos A., "An Integrated SHM Approach for Crack Growth Monitoring," Journal of Intelligent Material Systems and Structures, (Accepted for Publication)

29. Mazzotti M., Marzani A., Bartoli I., Viola E., "Guided Waves dispersion analysis for prestressed viscoelastic waveguides by means of the SAFE Method," International Journal of Solids and Structures (Accepted for Publication)

CONFERENCE PAPERS

1. **Bartoli, I.**, Di Leo, A. and Viola, E. "Identification of Elastic Constants by Bayesian Approach," Problems in structural identification and diagnostic: general aspects and applications. Davini, C. Viola. E. Springer, Wien - New York, pp. 1-15 (2003).

2. **Bartoli, I.** and Viola, E. "Problems Concerning the Elastic Constants Determination of Isotropic and Orthotropic Plates," Problems in structural identification and diagnostic: general aspects and applications. Davini, C. Viola. E. Springer, Wien - New York, pp. 17-31 (2003).

3. Viola, E., Paulo Kay, J. and **Bartoli, I.** "Identificazione dinamica delle costanti elastiche attraverso l'impiego di metodi statistici bayesiani," XVI Congresso AIMETA di Meccanica Teorica e Applicata. (Ferrara, September 9-12, 2003) pp. 1-10 Atti su CD-ROM (2003).

4. Rizzo, P., **Bartoli, I.**, and Lanza di Scalea, F.,. "Feature Extraction for High-speed Defect Detection in Rails by Non-contact Guided Ultrasonic Testing," Proceedings of the ASNT 14th Annual Research Symposium, Albuquerque, NM, Mar. 14-18, CD-ROM (2005).

5. Rizzo, P., **Bartoli, I.**, Coccia, S., Lanza di Scalea, F., and Fateh, M. "Enhancement in Guided Wave Structural Health Monitoring by the Discrete Wavelet Processing: Application to Multi-wire Strands and Rail Tracks," Proceedings of the 5th International Workshop on Structural Health Monitoring: Advancements and Challenges for Implementation, Ed. F.-K. Chang, Stanford, CA, September 12-14, pp. 1259-1266 (2005).

6. Rizzo, P., **Bartoli, I.**, Lanza di Scalea, F., Coccia, S., and Fateh, M. "High-speed Defect Detection in Rails by Non-contact Guided Ultrasonic Testing," Proceedings of SPIE's 10th Annual International Symposium on Nondestructive Evaluation Health Monitoring and Diagnostics – Health Monitoring and Smart Nondestructive Evaluation of Structural and Biological Systems IV, Ed. Tribikram Kundu, Proc. of SPIE Vol. 5768, pp. 274-284 (2005).

7. Lanza di Scalea, F., **Bartoli, I.**, Rizzo, P. and Fateh, M. "High-speed Defect Detection in Rails by Non-contact Guided Ultrasonic Testing," Proceeding of the 84th Annual Conference of the Transportation Research Board, CD-ROM, pp. 1-20 (2005).

8. **Bartoli, I.**, Viola, E., and Marzani, A. "Flutter and divergence instability of orthotropic plates," Composites in Construction (Cosenza, September 16-19, 2005) Bruno, Spadea; University of Calabria, Cosenza, Swamy pp. 533-538 (2005).

9. **Bartoli, I.**, Di Leo, A. and Viola, E. "Parameter Estimation of Fibre Reinforced Composite Materials using Bayesian Approach," Composites in Construction (Cosenza, September16-19, 2005) Bruno, Spadea; University of Calabria, Cosenza, Swamy pp. 595-600 (2005).

10. Viola, E., **Bartoli, I.**, Paulo Kay, J. "Transverse Shear Effect on the Frequencies Assessment of Thick Plates," Composites in Construction (Cosenza, September16-19, 2005) Bruno, Spadea; University of Calabria, Cosenza, Swamy pp. 539-544 (2005).

11. Marzani, A. **Bartoli, I.**, Lanza di Scalea, F. and Viola, E. "Guided wave features in absorbing waveguide with arbitrary cross-section," XVII Congresso AIMeTA di Meccanica Teorica e Applicata (Firenze, September 11-15, 2005) C. Borri, L. Facchini, G. Federici, M. Primicerio Firenze University Press (2005).

12. Matt, H., **Bartoli, I.**, Coccia, S., Lanza di Scalea, F., Kosmatka, J., Park, G. and Farrar, C. "Built-in guided-wave diagnostic system for the wing skin-to-spar bond in unmanned aerial vehicles," IWSHM - The 5th International Workshop on Structural Health Monitoring (Stanford, CA, September 12-14, 2005).

13. Rizzo, P., Matt, H., Coccia, S., Lanza di Scalea, F., **Bartoli, I.**, Marzani, A., and Viola, E. "Guided ultrasonic waves for the inspection of structural components," XVI Convegno Italiano di Meccanica Computazionale (XVI Italian Congress of Computational Mechanics), GIMC 2006, Bologna, Italy, June 26-28, (2006).

14. Matt, H., **Bartoli, I.**, Coccia, S., Lanza di Scalea, F., Kosmatka, J., Park, G., and Farrar, C., "Guided Wave Interrogation of Composite Bonded Joints Using MFC Sensors," Proceedings of the SEM IMAC 24th Conference and Exposition on Structural Dynamics, St. Louis, MO, (2006).

15. **Bartoli, I.**, Marzani, A., Matt, H., Lanza di Scalea, F. and Viola, E., "Modeling Guided Wave Propagation for Structural Health Monitoring Applications," Proceedings of the SEM IMAC 24th Conference and Exposition on Structural Dynamics, St. Louis, MO, (2006).

16. Rizzo, P., Lanza di Scalea, F., Matt, H., **Bartoli, I.**, Coccia, S., Salamone, S., Sorrivi, E., Marzani, A., Viola, E., Park, G., Farrar, C., Di Paola, M., and Pirrotta, A. "Health Monitoring of Civil and Aerospace Structural Components by Guided Ultrasonic Waves," 4th World Conference on Structural Control and Monitoring, San Diego, CA 11-13 July, 2006, (2006).

17. Marzani, A., **Bartoli, I.**, Lanza di Scalea, F. and Viola, E. "Enhancement in modelling Guided Wave propagation by Semi-Analytical Finite Element method for Ultrasonic Nondestructuive Evaluation purposes," 7th World Congress on Computational Mechanics, Los Angeles, CA, (2006).

18. Marzani, A., **Bartoli, I.**, Lanza di Scalea, F. and Viola, E. "Finite element based technique for modeling propagative stress waves in axisymmetric viscoelastic waveguides," XVI Convegno Italiano di Meccanica Computazionale, 26-28 Giugno, Bologna (2006).

19. Lanza di Scalea, F., Rizzo, P., Coccia, S., **Bartoli, I.**, and Fateh, M., "Development of a Non-contact Defect Detection System for Railroad Tracks for the US Federal Railroad Administration," THIRD EUROPEAN WORKSHOP ON STRUCTURAL HEALTH MONITORING, July, 5th-7th, 2006 Granada (Spain), (2006).

20. Matt, H., **Bartoli, I.**, Salamone, S., Rizzo, P., Lanza di Scalea, F., Park, G., and Farrar, C., "Automated Damage Detection in UAV Wing Skin-to-Spar Joints based on Outlier Analysis of Guided Wave Energy," THIRD EUROPEAN WORKSHOP ON STRUCTURAL HEALTH MONITORING, July, 5th-7th, 2006 Granada (Spain), (2006).

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