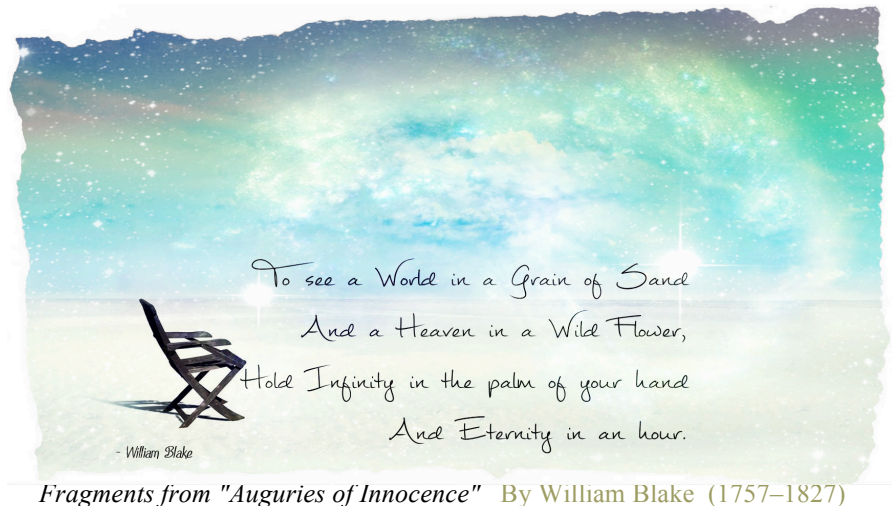


STOCHASTIC MECHANICS
Capri, 12th-15th June 2016
MECCANICA STOCASTICA

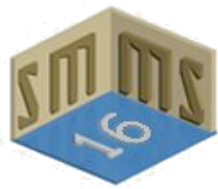


Chairs
G. Muscolino
A. Pirrotta



Fragments from "Auguries of Innocence" By William Blake (1757–1827)

CONFERENCE PROGRAM



STOCHASTIC MECHANICS 2016 MECCANICA STOCASTICA

One Page Program

Sunday, 12 June 2016 –

16.00 – 18.00 Registration and Welcome Cocktail

Monday, 13 June 2016 –

9.00 – 9.45 **Keynote Lecture G. Solari**

9.45 – 11.05 **Session I (4 presentations)**

11.05 – 11.35 Coffee Break

11.35 – 13.15 **Session II (5 presentations)**

Tuesday, 14 June 2016 – MORNING

9.00 – 9.45 **Keynote Lecture P.D. Spanos**

9.45 – 11.05 **Session III (4 presentations)**

11.05 – 11.35 Coffee Break

11.35 – 13.15 **Session IV (5 presentations)**

Tuesday, 14 June 2016 – AFTERNOON

15.00 – 17.00 **Session V (6 presentations)**

17.00 – 17.30 Coffee Break

17.30 – 18.30 **AIMETA MEETINGS (Chairs: M. Di Paola, L. Feo, F. Marotti, G. Muscolino)**

19.00 Sunset & Social Dinner

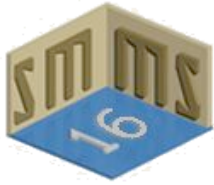
Wednesday, 15 June 2016

8.40 – 9.25 **Keynote Lecture M. Di Paola**

9.25 – 11.05 **Session VI (5 presentations)**

11.05 – 11.35 Coffee Break

11.35 – 13.35 **Session VII (5 presentations)**



STOCHASTIC MECHANICS
2016
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Sunday, June 12th 2016

16:00 – 18:00 Registration

18.00 – 19.00 Welcome and Coffee Greetings

Monday, June 13th 2016

9.00 – 9.45: Keynote Lecture **Giovanni Solari**

Aerodynamic Loading and Dynamic Response of Structures in Mixed Wind Climates

9:45 - 11:05: **Session I**

Chairs: I. Kougoumtzoglou, A. Pirrotta

- 1) 9:45 – “On duality of sample paths discontinuity definition in stochastic impulse process problems: left-continuous with right limits vs. right-continuous with left limits.”

Radosław IWANKIEWICZ.

- 2) 10:05– “Nonlinear random vibrations of plates endowed with fractional derivative elements.”

Giovanni MALARA & Pol D. SPANOS.

- 3) 10:25 – “Coupled bending-torsion stochastic response of beams with elastic supports and attachments.”

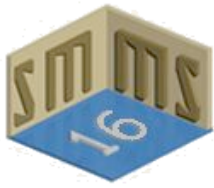
Andrea BURLON, Giuseppe FAILLA & Felice ARENA.

- 4) 10:45 – "On the influence of stochastic train speed variation in the mechanical behaviour of fractional viscoelastic rail track ballast"

Natalia COLINAS-ARMIJO & Mario DI PAOLA

11:05 – 11:35 Coffee Break

Enjoy Patron Saint Day in Anacapri!!!



STOCHASTIC MECHANICS
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Monday, June 13th 2016

11:35 - 13:15 **Session II**

Chairs: A. Adam, S. Baxter

- 1) 11:35– “Simulation of higher-order stochastic processes by spectral representation.”

Michael D. SHIELDS & Hwanpyo KIM.

- 2) 11:55 - “On Multiple Support Random Excitation of Bridge Structures.”

Rudolf HEUER

- 3) 12:15 – “Estimation of residuals for the homogenized solution of random media.”

Federico CLUNI & Vittorio GUSELLA.

- 4) 12:35 – “Galerkin scheme based determination of first-passage probability of bilinear system with fractional derivative element”

Alberto DI MATTEO, Antonina PIRROTTA & Pol SPANOS.

- 5) 12:55 – “Dynamic response of stochastic systems using random eigenfunction: A Galerkin error minimization approach.”

S. PRYSE & Sondipon ADHIKARI.



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Tuesday, Morning, June 14th 2016

9.00 – 9.45 Keynote Lecture **Pol.D. Spanos**

Advantages of Filter Based Models of Wind Spectra for Dynamic Analyses of Large Structure

9:45 - 11:05 **Session III**

Chairs: V. Gusella., F. Yamazaki

1) 9:45 – “A new perspective on seismic intensity measures.”

Mircea GRIGORIU.

2) 10:05 – “Recent developments in solution of uncertainty propagation problems via Neumann series.”

André T. BECK , Claudio R. ÁVILA DA SILVA Jr. & Roberto Mauro Felix SQUARCIO.

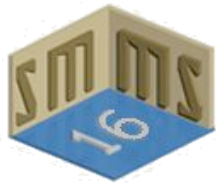
3) 10:25 – “Response Surface Methods for Stochastic Structural Optimization.”

Christian BUCHER.

4) 10:45 – “Reliability assessment of high-speed train railway bridges.”

Christoph ADAM, Patrick SALCHER & Helmut PRADLWARTER.

11:05 – 11:35 Coffee Break



STOCHASTIC MECHANICS
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Tuesday, Morning, June 14th 2016

11:35 - 13:15 **Session IV**

Chairs: M. Gioffrè, M. Grigoriu

- 1) 11:35– “Stochastic multiscale modelling of dynamical systems with friction between rough surfaces.”

Carsten PROPPE.

- 2) 11:55 - “Expected life cost and optimal retrofit design of reinforced concrete housing structures: a case study.”

Salvatore SESSA, Francesco MARMO & **Luciano ROSATI.**

- 3) 12:15 – “Peculiarities in systems with noisy control.”

Alexander BRATUS , Ivan YEGOROV & **Daniil YURCHENKO.**

- 4) 12:35 – “Interval Finite Element Analysis of Structures with Uncertain Parameters.”

E. ROMEO & Alba SOFI.

- 5) 12:55 – “Time-varying frequency response function of non-classically damped linear structures under spectrum compatible fully non-stationary stochastic excitations.”

Tiziana ALDERUCCI & Giuseppe MUSCOLINO.



STOCHASTIC MECHANICS
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Tuesday, Afternoon, June 14th 2016

15:00 - 17:00 **Session V**

Chairs: A. Beck , M. Shields

- 1) 15:00 – A framework for the efficient and accurate response estimation of linear systems subject to arbitrary stationary wind excitation

M. CIANO, **M. GIOFFRÈ**, S.M.J. SPENCE & M. GRIGORIU

- 2) 15:20 – “The distribution of the maximum wind-induced response of structures.”

Giuseppe PICCARDO, Serena POGGI & **Giovanni SOLARI**.

- 3) 15:40 – “ Damage assessment of bridges using spatial characteristics of high-resolution satellite SAR intensity images.”

Fumio YAMAZAKI, Kazuki INOUE & Wen LIU.

- 4) 16:00 – “Generation of fully non-stationary accelerograms by harmonic wavelets.”

Alessandro PALMERI & Nicola IMPOLLONIA.

- 5) 16:20 –“A comprehensive stochastic model for the seismic analysis of large structures.”

Federico PEROTTI, Luca MARTINELLI, Marianna TOMASIN & Marco DOMANESCHI.

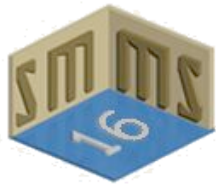
- 6) 16:40 “Seismic behaviour of structures with plastic shear effects.”

Claudia CENNAMO, **Michelina MONACO**, Antonio GESUALDO & Antonino IANNUZZO.

17:00 – 17:30 Coffee Break

17.30 – 18.30 **AIMETA MEETINGS** (Chairs: M. Di Paola, L. Feo , F. Marotti, G. Muscolino)

18:50 Sunset and Social Dinner at “Faro” Anacapri by BUS.



STOCHASTIC MECHANICS
2016
MECCANICA STOCASTICA

Wednesday, June 15th 2016

8.40 – 9.25 Keynote Lecture **Mario Di Paola**

Probabilistic Response of Nonlinear Systems under Normal and Non-Normal White Noises Handled by Complex Fractional Moments

9:25 - 11:05 **Session VI**

Chairs: R. Iwankiewicz, D. Yurchenko

- 1) 9:25 – “Apparent Properties Distributions Based on Partitioning of Random Microstructures.”

Sarah C. BAXTER & Katherine A. ACTON.

- 2) 9:45 – “Sensitivity to material contrast and scaling measures in statistically based homogenization procedure for random composite materials.”

Patrizia TROVALUSCI, **Maria Laura DE BELLIS**, Martin OSTOJA-STARZEWSKI, Emanuele RECCIA & Renato MASIANI.

- 3) 10:05 – “Hilbert transform based stochastic averaging of nonlinear oscillators.”

Pol D. SPANOS, **Ioannis A. KOUGIOUMTZOGLOU**, Ketson R. M. DOS SANTOS & Andre T. BECK.

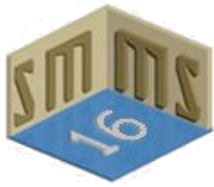
- 4) 10:25– Some observations on the accuracy of the Wiener path integral solution based on the most probable path approximation

Antonios T. MEIMARIS, Ioannis A. KOUGIOUMTZOGLOU & **Athanasios A. PANTELOUS**

- 5) 10:45 “Nonlinear Stochastic Dynamics of an Oscillating Water Column (U-OWC) Harvester: Monte Carlo and Analytical Approaches.”

Federica Maria STRATI, Pol D. SPANOS, Felice ARENA & **Giovanni MALARA**.

11:05 – 11:35 Coffee Break



STOCHASTIC MECHANICS
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Wednesday, June 15th 2016

11:35 - 13:35 **Session VII**

Chairs: R. Heuer, P. Trovalusci

- 1) 11:35 – “Damage detection in a precast structure subjected to an earthquake: a numerical approach.”

Alessio PIERDICCA, Francesco CLEMENTI, Diletta MARACCI, Daniela ISIDORI & Stefano LENCI.

- 2) 11:55 – “Pedestrian-footbridge dynamic interaction: a probabilistic assessment of vibration serviceability.”

Eleonora LAI & **Maria Gabriela MULAS**.

- 3) 12:15 – “Tolerance limits of spatially correlated samples for the assessment of concrete strength.”

Massimo Federico BONFIGLI, Marco BRECCOLOTTI & Annibale Luigi MATERAZZI.

- 4) 12:35 – “Stochastic optimal control problems in mathematical models of therapy processes against human diseases.”

Alexander BRATUS, Ivan YEGOROV & **Daniil YURCHENKO**.

- 5) 12:55 - “A Stochastic Dynamics Approach for Seismic Response Spectrum-Based Analysis of Hysteretic Multi-Storey Building Structures.”

Ioannis P. MITSEAS , Ioannis A. KOUGIOUMTZOGLOU, Agathoklis GIARALIS, Pol D. SPANOS & Michael BEER.

- 6) 13:15 - “Assessment of wind speed extreme values by Bayes estimation.”

E. CHIODO, **Fabio DE ANGELIS**, & D. LAURIA.

Thanks to All of You!