

The SSM - School for Advanced Studies (<http://www.ssm.unina.it/en>) at the University of Naples Federico II, is starting its first cycle of highly interdisciplinary scientific colloquia, organized by the PhD programs in “Advanced Mathematical and Physical Sciences for Advanced Materials and Technologies”, “Cosmology, Space Science and Space Technology” and “Modeling and Engineering Risk and Complexity”.

Each colloquium starts with a 50-minute-long seminar by a prominent expert in the field, followed by interactive discussion with the audience. The talks are aimed primarily at PhD students, and young researchers, but are open to all those interested.

Program

Beyond Einstein gravity: Dark energy and dark matter as curvature effects

19 November 2020 - 2 pm CET | Salvatore Capozziello
Professor at “Ettore Pancini” Department of Physics, University of Naples Federico II – Italy
Scuola Superiore Meridionale - Italy

The Ohta-Kawasaki model for diblock copolymers: Stability and minimality of critical points

26 November 2020 - 2 pm CET | Nicola Fusco
Professor at “Renato Caccioppoli” Dept. of Mathematics and Applications, University of Naples Federico II – Italy
Scuola Superiore Meridionale - Italy

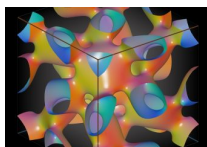
Network systems, Kuramoto oscillators, and synchronous power flow

3 December 2020 - 2 pm CET | Francesco Bullo
Professor at Department of Mechanical Engineering, University of California Santa Barbara – U.S.A.
Scuola Superiore Meridionale - Italy

Measuring the expansion of the universe with quasars

10 December 2020 - 2 pm CET | Guido Risaliti
Professor at Department of Physics and Astronomy, University of Florence - Italy

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Synchronization: A universal concept in nonlinear sciences

14 January 2021 - 2 pm CET | Juergen Kurths

Professor at Department of Complexity Science, Potsdam Institute for Climate Impact Research, Germany
Scuola Superiore Meridionale - Italy

Probing gravitational field: A fundamental viewpoint

21 January 2021 - 2 pm CET | Lorenzo Fatibene

Professor at "Giuseppe Peano" Department of Mathematics, University of Turin – Italy

Quantum simulators

28 January 2021 - 2 pm CET | Rosario Fazio

Professor at "Ettore Pancini" Department of Physics, University of Naples Federico II – Italy
International Center for Theoretical Physics ICTP, Trieste – Italy

Engineering the firearm ecosystem: Research on media coverage and firearm acquisition in the aftermath of a mass shooting

4 February 2021 - 2 pm CET | Maurizio Porfiri

Professor at Department of Mechanical and Aerospace Engineering, New York University – U.S.A.
Scuola Superiore Meridionale – Italy

Measuring the cosmological parameters with SNe-Ia and gamma-ray bursts

11 February 2021 - 2 pm CET | Massimo Della Valle

Astronomical Observatory of Capodimonte – Italy
Scuola Superiore Meridionale – Italy

Variational approximations of the Griffith functional

18 February 2021 - 2 pm CET | Francesco Solombrino

Associate Professor at "Renato Caccioppoli" Department of Mathematics and Applications, University of Naples Federico II – Italy

The SHiP project at CERN

25 February 2021 - 2 pm CET | Andrey Golutvin

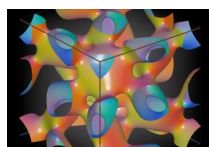
Chair in Physics and Professor at Department of Physics, Imperial College London – U.K.

Astroparticle physics in the era of multi-messenger astronomy

4 March 2021 - 2 pm CET | Gennaro Miele

Professor at "Ettore Pancini" Department of Physics, University of Naples Federico II – Italy
Scuola Superiore Meridionale - Italy

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Hierarchical seismic imaging

11 March 2021 - 2 pm CET | Jean Virieux
Professor at Laboratory in Earth Sciences: ISTerre, Université Grenoble Alpes – France

Additive Manufacturing: A world full of opportunities and challenges!!

18 March 2021 - 2 pm CET | Ferdinando Auricchio
Professor at Department of Civil Engineering and Architecture, University of Pavia – Italy

The coming revolution of data driven discovery (a fourth methodological paradigm of science)

25 March 2021 - 2 pm CET | Giuseppe Longo
Professor at “Ettore Pancini” Department of Physics, University of Naples Federico II – Italy

Why do we cooperate? Understanding and modelling societies using reinforcement learning

1 April 2021 - 2 pm CET | Mirco Musolesi
Professor at Department of Computer Science, University College London – U.K.
Turing Fellow, Alan Turing Institute, UK National Institute for Data Science and Artificial Intelligence – U.K.
Professor at Department of Computer Science and Engineering at the University of Bologna – Italy
Scuola Superiore Meridionale - Italy

Rheo-engineering microfluidics: How to exploit rheological properties of fluids to design microfluidic applications

8 April 2021 - 2 pm CET | Pier Luca Maffettone
Professor at Dept. of Chemical, Material and Production Engineering, University of Naples Federico II – Italy
Scuola Superiore Meridionale - Italy

Classical Cepheids as distance indicators: From the Milky Way to the Hubble constant

15 April 2021 - 2 pm CET | Marcella Marconi
Director at Astronomical Observatory of Capodimonte in Naples – Italy

Microgravity, science and technology: An overview

22 April 2021 - 2 pm CET | Fabio Peluso
Senior Technical Project Manager at Leonardo S.p.A – Italy

Putting More PHYS into PSHA: Advancing seismic hazard analysis with physics-based modelling

29 April 2021 - 2 pm CET | Thomas H. Jordan
Professor at University of South California Dornsife – U.S.A.
Southern California Earthquake Center – U.S.A

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Modelling the complexity of multiagent activity for human-AI interaction using dynamical primitives

6 May 2021 - 2 pm CET | Michael Richardson

Professor at Department of Psychology; Centre for Elite performance, Expertise and Training; Faculty of Medical, Health and Human Sciences; Macquarie University – Australia
Scuola Superiore Meridionale – Italy

Dark energy and cosmic acceleration

13 May 2021 - 2 pm CET | Jailson S. Alcaniz

Professor at Observatorio Nacional Astronomia & Astrofisica, Rio de Janeiro – Brazil

The beat of math

20 May 2021 - 2 pm CET | Alfio Quarteroni

Professor at Politecnico di Milano – Italy

Professor emeritus at Ecole Polytechnique Fédérale de Lausanne (EPFL) – Switzerland

Synchronization in complex networks, hypergraphs and simplicial complexes

27 May 2021 - 2 pm CET | Stefano Boccaletti

Senior researcher at the CNR's Institute for Complex Systems in Florence – Italy

Universidad Rey Juan Carlos, Madrid – Spain

Unmanned Systems Research Institute, Northwestern Polytechnical University, Xi'an – China

Moscow Institute of Physics and Technology, Moscow – Russia

Scuola Superiore Meridionale - Italy

Dynamics of PDEs and recurrent motions

3 June 2021 - 2 pm CET | Pietro Baldi

Department of Mathematics and Applications “Renato Caccioppoli”, University of Naples Federico II – Italy

Seismic risk assessment and management – The Groningen gas field case

10 June 2021 - 2 pm CET | Annemarie Muntendam-Bos

Senior Specialist at the State Supervision of Mines, the Dutch safety authority for mining activities – Netherlands

Associate Professor on Induced Seismicity (part time) at the Delft University of Technology – Netherlands

The pandemic playbook, a physicist take

17 June 2021 - 2 pm CET | Francesco Sannino

Professor at “Ettore Pancini” Department of Physics, University of Naples Federico II – Italy

Director of the Centre for Cosmology and Particle Physics Phenomenology (CP³-Origins) – Denmark

Chair at the Danish Institute for Advanced Study – Denmark

Scuola Superiore Meridionale – Italy

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Symmetries and quantum mechanics: From phase transitions to the evolution of our universe

24 June 2021 - 2 pm CET | Massimo Taronna

Associate Professor at "Ettore Pancini" Physics Department, University of Naples Federico II – Italy

On the synthesis and crowdsourcing of control policies for autonomous agents from data

1 July 2021 - 2 pm CET | Giovanni Russo

Professor at Department of Electrical and Information Engineering and Applied Mathematics, University of Salerno – Italy

Probing the early universe with LISA and ET gravitational wave detectors

8 July 2021 - 2 pm CET | Angelo Ricciardone

Istituto Nazionale Di Fisica Nucleare (INFN), Padova – Italy

What is matter according to particle physics, and why try to observe its creation in a lab?

15 July 2021 - 2 pm CET | Francesco Vissani

Istituto Nazionale Di Fisica Nucleare (INFN), Padova – Italy

The colloquia are held online, on Zoom.

Meeting ID: 992 230 3133 | Passcode: ssm_zoom | Alternative passcode: 59529651

Meeting link: <https://zoom.us/j/9922303133?pwd=VTEwSDV6L0J5bG9DUU5tUU1mZXp6Zz09>

The programme was planned by the Coordinators of the PhD programs in "Advanced Mathematical and Physical Sciences for Advanced Materials and Technologies", "Cosmology, Space Science and Space Technology" and "Modeling and Engineering Risk and Complexity", namely, Prof. Nicola Fusco, Prof. Salvatore Capozziello, and Prof. Mario di Bernardo. The events were arranged and chaired by Dr. Micol Benetti and Dr. Marco Coraggio.

These events are organized by the PhD programs in "Advanced Mathematical and Physical Sciences for Advanced Materials and Technologies", "Cosmology, Space Science and Space Technology" and "Modeling and Engineering Risk and Complexity".

