

# CALCOLO SCIENTIFICO E MODELLI MATEMATICI: alla ricerca delle cose nascoste attraverso le cose manifeste

6-8 Aprile 2022, Aula Convegni, CNR, Piazzale Aldo Moro, Roma

## PROGRAMMA

### 6 Aprile 2022

09:10 Apertura Convegno: Chairman Roberto Natalini

09:30 Ilaria Dorigatti (ICL, Londra)  
*"Modelling the transmission of SARS-CoV-2 in the early phases of the COVID-19 pandemic"*

10:10 Emiliano Cristiani (IAC-CNR, Roma)  
*"Vehicular and pedestrian traffic: optimization through digital twins"*

10:50 Coffee Break

11:30 Silvia Bonettini (Univ. Modena)  
*"Forward-backward methods for convex and nonconvex optimization in imaging"*

12:10 Giuseppe Vacca (Univ. Bari)  
*"An introduction to the divergence-free Virtual Element Method with focus on the Oseen Equation"*

12:50 Pranzo

14:30 Chairman: Maurizio Falcone

14:30 Roberto Garrappa:(Univ. Bari)  
*"Fractional calculus: from physics to mathematical models (and numerical simulations)"*

15:10 Francesco Calabrò (Univ. Napoli)  
*"Neural Networks of ELM type for the numerical solution of PDEs with collocation"*

15:50 Coffee Break

16:30 Pasqua D'Ambra (IAC-CNR, Napoli)  
*"MG preconditioners for computational and data science at extreme scale"*

17:10 Tavola rotonda

20:30 Cena sociale

## 7 Aprile 2022

09:00 Chairman: Carla Manni

09:00 Andrea Moiola (Univ. Pavia)  
*"Stable approximation of Helmholtz solutions by evanescent plane waves"*

09:40 Mario di Bernardo (Univ. Napoli e Bristol)  
*"Controlling complex systems: challenges and opportunities"*

10:20 Stefania Bellavia (Univ. Firenze)  
*"Adaptive optimization methods using random models and examples from machine learning"*

11:00 Coffee Break

11:40 Dimitri Breda (Univ. Udine)  
*"Numerical computation of the basic reproduction number"*

12:20 Bruno Iannazzo (Univ. Perugia)  
*"Geometries on the cone of positive definite matrices and their relation to the power means"*

13:00 Pranzo

15:00 Chairman: Michele Piana

15:00 Francesco Tudisco (GSSI, L'Aquila)  
*"Learning from network data with nonlinear eigenvectors"*

15:40 Alberto Sorrentino (Univ. Genova)  
*"Selection of the regularization parameter comes for free with sequential Monte Carlo samplers"*

16:20 Coffee Break

17:00 Matteo Semplice (Univ. Insubria, Como)  
*"Preserving exactly equilibrium solutions to obtain accurate off-equilibrium simulations"*

17:40 Annalisa Quaini (Univ. Houston)  
*"Towers the computational design of smart nanocarriers"*

## 8 Aprile 2022

09:00 Chairman: Luciano Lopez

09:00 Claudia Angelini (IAC, Napoli)  
*"High dimensional data integration using graphical models"*

09:40 Lorenzo Tamellini (IMATI-CNR, Pavia)  
*"A multi-fidelity method for uncertainty quantification in engineering problem"*

10:20 Carolina Beccari (Univ. Bologna)  
*"Numerical methods for piecewise Chebyshevian splines and applications"*

11:00 Coffee break

11:40 Marco Verani (Politecnico Milano)  
*"Adaptive Virtual Element Method"*

12:20 Carlotta Giannelli (Univ. Firenze)  
*"Smooth path planning for autonomous vehicles: perspectives from the theory of Pythagorean-hodograph curves"*

13:00 Chiusura del convegno