PROGRAMMA

9:00 - 9:15 **Saluti di Benvenuto**
Ing Emilio Fortunato Campana, Direttore DIITET

9:15 - 9:30 **Introduzione alla giornata: Matematica Applicata nel DIITET**
Roberto Natalini, Giovanni Rinaldi, Michela Spagnuolo

9:30 -10:45 **Scientific Computing**

New CHallenges for (adaptive) PDE solvers: the interplay of ANalysis and GEometry
Micol Pennacchio (IMATI, Pavia and Genova)

Computational techniques for uncertainty quantification of partial differential equations with random parameters
Lorenzo Tamellini (IMATI, Pavia)

Scalable preconditioners for sparse and large linear systems
Pasqua D'Ambra (IAC, Napoli)

On the role of numerical viscosity in the approximation of systems of conservation laws
Laura Spinolo (IMATI, Pavia)

Innovative methodologies in applied mathematics: the developments of Particle Methods for fluid mechanics at CNR
Andrea Colagrossi (INM, Roma)

10:45 -11:15 **Coffee Break**

11:15 -12:15 **Invited Talk**

Hard Sciences: Separating Hype from Fundamentals
Prof. Alberto L. Sangiovanni-Vincentelli
(The Edgar L. and Harold H. Buttner Chair, Department of EECS, University of California, Berkeley and Co-founder, Member of the Board and Chief Technical Adviser, Cadence Design Systems)

12:15-13:15 **Optimization**

Optimization-based Decision Support Tools to Promote Sustainable Freight Transport in Urban Contexts
Antonino Sgalambro (IAC, Roma)

The Perspective Reformulation in Mixed-Integer Nonlinear Optimization
Claudio Gentile, (IASI, Roma)

Consiglio Nazionale delle Ricerche

Robust Optimization
Sara Mattia (IASI, Roma)

Optimization under uncertainty
Fabrizio Dabbene (IEIIT, Torino)

13:15 - 14:15   **Lunch Break & Poster Session**
Buffet in Aula Arangioruiz

14:15 - 14:30   **Matematica e Imprese - l'esperienza dello SPORTELLO MATEMATICO**

14:30 - 15:45   **Mathematical Modelling**

Modelling the Immune Response
Filippo Castiglione (IAC, Roma)

Mathematical Modeling in Systems Biology and Biomedical Application
Pasquale Palumbo (IASI, Rome)

Optimal spatio-temporal control of invasive plants in protected areas
Carmela Marangi (IAC, Bari)

Computational topology methods for reasoning on shape analysis and similarity
Silvia Biasotti (IMATI, Genova)

Persistent homology for data analysis and machine learning: past, present, and future challenges
Daniela Giorgi (ISTI, Pisa)

15:45 - 16:15   Coffee Break

16:15 - 17:30   **Data Science**

Industrial statistics: between tradition and innovation
Antonio Pievatolo (IMATI, Milano)

SAR Meteorology: is it a new perspective in the atmospheric remote sensing with space geodesy and high precision Numerical Weather Prediction (NWP) models?
Giovanni Nico (IAC, Bari)

Advancing the frontiers of earthquake science through statistical seismology
Elisa Varini (IMATI, Milano)

Traffic Data Classification for Police Activity
Stefano Guarino (IAC, Roma)

Network-Based Data Analysis
Paola Paci (IASI, Roma)