



Online-workshop on

Modeling and Control of the COVID-19 outbreak

"How dynamical models can help control the epidemic"

Friday, April 24



Preliminary program

Opening Session

09:20 – 9:50

Opening Remarks

Fabrizio Dabbene, IEEE CSS Italy Chair

Invited Talk: the economists' perspective

09:20 – 9:50

Modelling Contacts and Transitions in the SIR Epidemics Model

Pietro Garibaldi^{1,2,6}, Espen R. Moen^{3,6}, Christopher Pissarides^{4,5,6,7}

¹Collegio Carlo Alberto, ²Università degli Studi di Torino, ³Norwegian Business School, ⁴London School of Economics,

⁵University of Cyprus, ⁶CEPR,

⁷The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel Laureate, 2010

Morning Session

10:40 – 11:00

A modified SIR model for the COVID-19 contagion in Italy

Giuseppe C. Calafiore^{1,2}, Carlo Novara² and **Corrado Possieri**³

¹IEIT-CNR, ²Politecnico di Torino, ³IASI-CNR

11:00 – 11:20

On fast multi-shot epidemic interventions for post lock-down mitigation: Implications for simple COVID-19 models

Michelangelo Bin¹, Peter Cheung¹, Emanuele Crisostomi², Pietro Ferraro¹, Hugo Lhachemi³, Richard Murray-Smith⁴, Connor Myant¹, **Thomas Parisini**^{1,5}, Robert Shorten¹, Sebastian Stein⁴, Lewi Stone⁶

¹Imperial College London, ²Università di Pisa, ³University College Dublin, ⁴University of Glasgow, ⁵Università di Trieste,

⁶George S. Wise Faculty of Life Sciences

11:20 – 11:40

Can the COVID-19 epidemic be managed on the basis of daily data?

Francesco Casella¹

¹Politecnico di Milano

11:40 – 12:00

Network model of the COVID-19 epidemic in Italy to design and investigate possible containment and mitigation strategies

Mario Di Bernardo¹, Giovanni Russo², Davide Liuzza³, Fabio Della Rossa⁴, Piero De Lellis¹ e Francesco Lo Iudice¹

¹Università degli Studi di Napoli, ²Università degli Studi di Salerno, ³ENEA, ⁴Politecnico di Milano

12:00 – 12:20

Modelling, tracing day-zero and forecasting the fade out of the COVID-19 outbreak: Experiences from China and Lombardy studies

Lucia Russo¹, Cleo Anastassopoulou², Athanassios Tsakris², Gennaro Nicola Bifulco³, Emilio Fortunato Campana⁴, Gerardo Toraldo³, Constantinos Siettos³
¹IST-CNR, ²University of Athens, ³Università degli Studi di Napoli, ⁴DIITET-CNR

Keynote Session

14:40 – 15:15

Inching Back to Normal after COVID-19 Lockdown: Quantification of Interventions

Munther A. Dahleh, Representing IDSS-COVID-19 Collaboration Group (ISOLAT)

Afternoon Session

15:40 – 16:00

A SIDARTHE model of COVID-19 epidemic in Italy

Giulia Giordano¹, Franco Blanchini², Raffaele Bruno^{3,4}, Patrizio Colaneri^{5,6}, Alessandro Di Filippo³, Angela Di Matteo³, Marta Colaneri³, COVID19 IRCCS San Matteo Pavia Task Force³

¹Università di Trento, ²Università di Udine, ³Fondazione IRCCS Policlinico San Matteo Pavia, ⁴Università di Pavia, ⁵Politecnico di Milano, ⁶IEIT-CNR,

16:00 – 16:20

A feedback SIR (fSIR) model: advantages and limitations of infection-based social distancing

Elisa Franco¹

¹University of California at Los Angeles

16:20 – 16:40

A metapopulation activity-driven network model for COVID-19 in Italy

Francesco Parino¹, Lorenzo Zino², **Alessandro Rizzo**^{1,3}, Maurizio Porfiri³

¹Politecnico di Torino, ²University of Groningen, ³New York University

16:40 – 17:00

A multicriteria approach for risk assessment of COVID-19 in urban district lockdowns

Maria Pia Fanti¹, Fabio Parisi¹, Valentino Sangiorgio¹

¹Politecnico di Bari

17:00 – 17:20

A new mathematical model of COVID-19 spread: analysis of the impact of intervention actions and evaluation of the asymptomatic infectious subjects

Paolo Di Giamberardino¹, **Daniela Iacoviello**¹, Federico Papa², Carmela Sinisgalli²

¹Università di Roma Sapienza, ²IASI-CNR