



DIPARTIMENTO
DI MATEMATICA
GIUSEPPE PEANO
UNIVERSITÀ DI TORINO

Calculus of Variations and Field Theories

in honour of Professor Marco Ferraris' 70th birthday

Department of Mathematics - University of Torino, May 31st, 2023

Organizers:

M. Palese, L. Fatibene, E. Winterroth
University of Torino, Italy

Lectures

- Andrzej Borowiec, University of Wrocław
Scalar tensor cosmologies with non-minimal coupling to matter
- Josef Janyska, University of Brno
Coupling of gravitational and electromagnetic fields - comparison between Galilean and Einsteinian spacetime
- Jerzy Kijowski, Polish Academy of Sciences, Warsaw
About the dangers and ambushes waiting for a theoretical physicist using variational principles
- David Saunders, London, Lepage Research Institute
Some geometrical perspectives on the calculus of variations

Communications

- Luca Accornero, KU Leuven
Natural bundles as actions of étale stacks
- Francesco Cattafi, University of Würzburg
From PDEs on jet bundles to Pfaffian fibrations
- Fabrizio Zanella, University of Göttingen
Renormalization of higher currents of the sine-Gordon model in pAQFT

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Preliminary Schedule

Dept. Math., 2nd floor, *Room 1*

09:55 – 10:00 OPENING.

10:00 - 10:40 DAVID SAUNDERS. *Some geometrical perspectives on the calculus of variations.*

10:45 - 11:25 ANDRZEJ BOROWIEC. *Scalar tensor cosmologies with non-minimal coupling to matter.*

11:25 – 11:40 break

11:40 - 12:20 JERZY KIJOWSKI. *About the dangers and ambushes waiting for a theoretical physicist using variational principles.*

12:25 - 12:55 LUCA ACCORNERO. *Natural bundles as actions of étale stacks.*

13:00 – 15:00 Lunch break

15:00 – 15:40 JOSEF JANYSKA. *Coupling of gravitational and electromagnetic fields - comparison between Galilean and Einsteinian spacetime.*

15:45 – 16:15 FRANCESCO CATTAFI. *From PDEs on jet bundles to Pfaffian fibrations.*

16:20 – 16:50 FABRIZIO ZANELLO. *Renormalization of higher currents of the sine-Gordon model in $pAQFT$.*