



Università
degli Studi di
Messina

DIPARTIMENTO DI SCIENZE
MATEMATICHE E INFORMATICHE,
SCIENZE FISICHE E SCIENZE DELLA TERRA



ACCADEMIA PELORITANA
DEI PERICOLANTI

NON-EQUILIBRIUM THERMODYNAMICS, CONTINUUM PHYSICS AND APPLIED PERSPECTIVES

Programme

15:00 **Welcome Address: Prof. Paolo V. Giaquinta**

*Direttore della Classe di Scienze Fisiche, Matematiche e Naturali,
Accademia Peloritana dei Pericolanti*

I session - June 23

Chairman: Vito A. Cimmelli

15:15 **Peter Ván:** *Liu procedure, gravity and quantum mechanics.*

15:45 **Domenico Giordano:** *Fluido & gravito-statics of a self-gravitating gas isothermal sphere.*

16:15 **Robert Kovacs:** *Thermodynamic interpretations of room temperature non-Fourier heat conduction experiments.*

16:45 **Coffee break**

Chairman: Robert Kovacs

17:15 **Liliana Restuccia:** *Dissipative processes in nanostructures with defects.*

17:45 **Michele Sciacca:** *Thermal solitons.*

18:15 **Michal Pavelka:** *Multiscale Hamiltonian mechanics and continuum thermodynamics.*

II session - June 24

Chairman: Domenico Giordano

9:00 **David Jou:** *Electric field dependence of thermal conductivity in bulk systems and nanosystems with defects.*

9:30 **Vito A. Cimmelli:** *New and recent results for thermoelectric energy conversion in graded alloys at nanoscale.*

10:00 **Vittorio Romano:** *Charge transport in graphene.*

10:30 **Roberto Beneduci:** *A continuous space-time non-linear probabilistic model for population spreading.*



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11:00 **Coffee break**

Chairwoman: Liliana Restuccia

11:30 **Natale Manganaro:** *Reduction procedures for hyperbolic systems.*

12:00 **Antonio Sellitto:** *Heat transfer at nanoscale and boundary conditions.*

12:30 **Maria Di Domenico:** *Thermal pulse propagation beyond the Maxwell-Cattaneo theory. Application to one-dimensional nanosystems.*

13:00 **Lunch**

III session - June 24

Chairman: Natale Manganaro

15:00 **Matteo Gorgone:** *Thermodynamical analysis of Korteweg fluids.*

15:30 **Francesco Oliveri:** *On constitutive equations for mixtures of Korteweg fluids.*

16:00 **Carmelo F. Munafò:** *Analysis of nonlinear non-Fourier heat transport in two dimensions.*

16:30 **Coffee break**

Chairman: Francesco Oliveri

17:00 **Elvira Barbera:** *Stationary flow and heat transfer in extended thermodynamics.*

17:30 **Guglielmo Inferrera:** *An operatorial model for spatially distributed populations.*

18:00 **Alessandra Rizzo:** *Nonlinear wave problems for the homogeneous p -system.*

18:30 **Annamaria Pollino:** *An extended thermodynamic theory for blood flow.*

19:00 **Closing: Patrizia Rogolino**