

24th INTERNATIONAL CONFERENCE ON TRANSPORT THEORY

Taormina (Italy), September 7-11, 2015

Hotel Villa Diodoro

<http://www.taosciences.it/icctt-2015/>

PROGRAMME¹



Sunday evening September 6

18:00-19:00 Registration

19:00 Welcome cocktail on the terrace of the Hotel Villa Diodoro

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1. The underlined authors are the speakers in the joint talks.
The talks of 30 minutes comprise 25 minutes of presentation plus 5 minutes of discussion.
The talks of 20 minutes comprise 15 minutes of presentation plus 5 minutes of discussion.
A laptop will be available at the conference room.
In the poster session each contribution has at disposal a panel having the dimension of an A0 sheet. No specific format is prescribed.

Monday morning September 7

8:30-13:00 Registration

8:45:00- 9:00 Welcome and salutations

Transport of neutrons/Reactor physics (1)

9:00-9:30 B. GANAPOL, *The infinite medium Green's function of monoenergetic neutron transport theory via Fourier Transform*

9:30-9:50 R. SANCHEZ, *An analysis of the application of neutron noise theory to vibrating solids*

9:50-10:10 K. DUGAN, I. ZMIJAREVIC, R. SANCHEZ, *Cross section homogenization for transient calculations*

10:10-10:30 S. DULLA, P. FABBRI, P. RAVETTO, A. PRINJA, *Neutron diffusion and transport problems in fluid-fuel reactors*

10:30-11:00 coffee break

11:00-11:30 L. PAL, I. PAZSIT, *Theory of fission detector signals in reactor measurements*

11:30-11:50 C. DE MULATIER, E. DUMONTEIL, A. ROSSO, A. ZOIA, *The critical catastrophe revisited*

11:50-12:10 B. GANAPOL, K. HUANG, Y. LI, *Initial investigation of the solution to the Bateman equations with backward Euler doubling finite difference*

12:10-12:30 F. R. OLIVEIRA, B. E. J. BODMANN, F. CARVALHO, M. T. VILHENA, *On an analytical formulation for the mono-energetic neutron space-kinetic equation in full cylinder symmetry*

12:30-12:50 B. PETROVIC, *Convergence diagnostics of Monte Carlo eigenvalue simulations by Shannon entropy iterative se entropy*

12:50-15:00 lunch break (on your own)

Monday afternoon September 7

Radiative transfer (1)

15:00-15:30 *J. R. HARTER, P. A. GREANEY, T. S. PALMER, Thermal conductivity prediction using deterministic phonon transport in rattlesnake*

15:30-15:50 *R. VASQUES, K. KRYCKI, Boundary conditions for the 1-D non-classical transport equation*

15:50-16:10 *T. SHUSSMAN, S. I. HEIZLER, Complete self-similar solution for both ablative and shock regions of a subsonic Marshak wave*

16:10-16:30 *N. A. GENTILE, Coupling implicit Monte Carlo thermal radiation transport to Lagrange and ALE hydrodynamics in the lab and fluid frames*

16:30-16:50 coffee break

16:50-17:10 *E. SOMASUNDARAM, T. PALMER, Application of variational variance reduction for source-detector problems*

17:10-17:30 *P. H. DE ALMEIDA KONZEN, F. S. DE AZVEDO, E. SAUTER, Green formulation and finite element discretization for solving radiative flows in a slab*

17:30-17:50 *A.I. KHISAMUTDINOV, Transport equation inverse problems and some nuclear geophysical technologies*

17:50-18:10 *C. A. LADEIA, B. E. J. BODMANN, M. T. VILHENA, The radiative conductive transfer equation in cylindrical geometry*

18:10-18:30 *W. ZHENG, R. G. McCLARREN, M. HANUS, An Accurate flux-limited diffusive PN closure: the PN quasi-transient (PNQT) model for radiation transport*

Tuesday morning September 8

Transport of neutrons/Reactor physics (2)

9:00-9:30 A. PRINJA, J. PATEL, *Effect of noise in Eddington factor on the scalar flux*

9:30-9:50 R. S. MANSUR, C. A. MOURA, R. C. BARROS, *A response matrix method for one-speed slab-geometry discrete ordinates adjoint calculations in source-detector problems*

9:50-10:10 R. GARCIA, *Analytical discrete-ordinates solution for an improved 1-D model of particle transport in ducts*

10:10-10:30 P. A. VAQUER, R. G. McLARREN, Y. J. AYZMAN, *A compressed sensing framework for Monte Carlo transport simulations using random disjoint tallies*

10:30-10:50 P. PICCA, B. GANAPOL, R. FURFARO, *Acceleration of source iteration via non-linear extrapolation algorithms*

10:50-11:10 coffee break

11:10-11:40 L. B. BARICHELLO, A. TRES, Y. Y. AZMY, *Recent studies on the accuracy of angular discretization schemes for two-dimensional discrete ordinates problems*

11:40-12:00 D. ZHANG, F. RAHNEMA, *Adjoint coarse mesh radiation transport (COMET) method*

12:00-12:20 D. LITSKEVICH, B. MERK, *Implementation of the orthogonal flux expansion in the frame of the current coupling collision probability method for unstructured geometries*

12:20-12:40 E. MASIELLO, *In-line stabilization of the coarse-mesh finite difference acceleration*

12:40-13:00 M. HANUS, R. G. McLARREN, *On the use of symmetrized transport equation in goal-oriented adaptivity*

13:00-15:00 lunch break (on your own)

Tuesday afternoon September 8

Radiative transfer (2)

15:00-15:30 M. MACHIDA, *The FN method in three dimensions*

15:30-15:50 D. WOODS, T. PALMER, T. BRUNNER, T. BAILEY, *Investigating the behavior of a higher order finite element discretization of the first-order form of the radiation transport equation*

15:50-16:10 T. PICHARD, G. W. ALLDREDGE, S. BRULL, B. DUBROCA, M. FRANK, *Approximating M2 closure*

16:10-16:30 J. KRIVANEK, I. GEORGIEV, T. HACHISUKA, P. VEVODA, M. SIK, D. NOWROUZEZAHRAI, W. JAROSZ,, *Unifying points, beams, and paths in volumetric light transport simulation*

16:30-16:50 coffee break

Plasma physics

16:50-17:20 C. NEGULESCU, S. POSSANNER, *Study of strongly-magnetized plasmas in the adiabatic regime*

17:20-17:40 S. GUISET, S. BRULL, E. D'HUMIERES, B. DUBROCA, *Asymptotic-preserving well-balanced scheme for the electronic M1 model in the diffusive limit: particular cases*

17:40-18:00 A. CHAPLIK, *Retardation effects in transport and plasma phenomena in 2D systems*

18:00-18:20 R. DE LA ROSA, M.L. GANDARIAS, M.S. BRUZON, *Symmetry group analysis of a fifth-order KdV equation with variable coefficients*

Wednesday morning September 9

Transport of charged particles/Semiconductors (1)

9:00-9:30 *I. DERETZIS, A. LA MAGNA, First principle calculations and kinetic process simulations of nitrogen and boron doped graphene*

9:30-9:50 *L. PARISI, R. DI GIUGNO, I. DERETZIS, G. G. N. ANGILELLA, A. LA MAGNA, Atomistic dynamics and electronic transport in hydrogenated graphene*

9:50-10:20 *V. ROMANO, A. MAJORANA, M. COCO, DSMC solutions for charge transport in monolayer graphene with a proper inclusion of the Pauli exclusion principle*

10:20-10:40 *A. MAJORANA, V. ROMANO, Deterministic solutions for charge transport in graphene on substrates*

10:40-11:00 *M. COCO, V. ROMANO, Thermal effects in monolayer graphene with a new DSMC approach*

11:00- 11:20 coffee break

11:20-11:40 *G. MASCALI, V. ROMANO, Electron-phonon transport in graphene and thermal effects*

11:40-12:00 *G. ALI', MEP models for charge and heat transport in semiconductors*

12:00-12:20 *T. CASTIGLIONE, O. MUSCATO, Electron transport in silicon quantum wires with non-parabolic band approximation*

12:20-12:40 *V. DI STEFANO, An Energy Transport Model describing electro-thermal transport in silicon carbide semiconductors*

12:40-13:00 *D. PESCHKA, N. ROTUNDO, M. THOMAS, Towards doping optimization of semiconductor lasers*

13:00-15:00 lunch break (on your own)

Wednesday afternoon September 9

15:30 Excursion

Wednesday evening September 9

20:30 Social dinner

21:00 Anile Prize

Thursday morning September 10

Quantum transport

9:00-9:30 L. BARLETTI, C. NEGULESCU, *A hybrid classical-quantum model for charge transport in graphene with sharp potentials*

9:30-9:50 N. BERNHOFF, *Discrete quantum kinetic equations and half-space problems*

9:50-10:10 K. KRAL, M. MENSİK *Transfer of energy and charge between quasi-zero-dimensional nanostructures*

10:10-10:30 O. MORANDI, P. A. HERVIEUX, G. MANFREDI, *Quantum model for the spin dynamics of magnetic systems excited by light*

10:30-10:50 M. KRIVORUCHENKO, *Quantum transport in the deformation quantization framework*

11:50-11:20 coffee break

Transport of charged particles/Semiconductors (2)

11:20-11:50 K. GAERTNER, *Discrete dissipative Structures and Semiconductor Device Equations*

11:50-12:10 C. HEITZINGER, L. TAGHIZADEH, *The Stochastic drift-diffusion-Poisson system for modeling nanoscale devices and a multi-level Monte-Carlo method*

12:10-12:30 C. HEITZINGER, L. TAGHIZADEH, *Existence and uniqueness for the Stokes-Nernst-Planck-drift-diffusion-Poisson system for modeling nanowire sensors and nanopores*

12:30-12:50 Ó. LOPEZ POUSO, N. JUMANIYAZOV, *Numerical experiments with the Fokker-Planck equation in 1D slab geometry*

13:00-15:00 lunch break (on your own)

Thursday afternoon September 10

Kinetic theory of classical particles/continuum derived models (1)

15:00-15:30 A.I. KHISAMUTDINOV, N.N. VERLKER, *Algorithms and numerical implementation of imitation Monte Carlo methods with splitting for problems of the Boltzmann equation*

15:30-15:50 A. VIBE, N. MARHEINEKE, *Derivation of the macroscopic stresses generated in a dilute suspension of weakly inertial particles in a Newtonian fluid*

15:50-16:10 M. ASADZADEH, *Discrete-ordinates and streamline diffusion methods for a BGK model*

16:10-16:30 L. BISCONTI, G. FROSALI, P. M. MARIANO, *Statistical foundations of the mechanics of complex bodies and related transport phenomena*

16:30-16:50 coffee break

16:50-17:20 J. POLEWCZAK, *Dilute and dense chemical reacting mixtures*

17:20-17:40 V.D. CAMIOLA, V. TOZZINI, *A preliminary study for graphene nanopumps*

17:40-18:00 S. LORENZANI, *Multiple forced-sound modes excited in disparate-mass gas mixtures flowing through microchannels*

18:15 -19:15 poster session

F. KHAN, *MHD and slip conditions over a stretching cylinder with variable thermal conductivity*

R. EVLN, S. P. V. MADHAVA RAO, S. V.S.S.N.V.G. KRISHNA MURTHY, SRI LATA Y. *Heat transfer process parameter optimization in Si/Ge using TAGUCHI method*

Z. SZATMARY, D. P. KIS, *Examination of stochastic and deterministic perturbations in reactor physics*

V. MOLINAR, D. MOSTACCI, B. GANAPOL, *The specific heat of liquid Helium*

V. MOLINAR, D. MOSTACCI, B. GANAPOL, *Wave propagation in an ideal gas: first and second sound*

N. BERNHOFF, M. VINEREAN, *Discrete velocity models without unphysical collision invariants for mixtures and polyatomic molecules*

E. DANESI, C. DE FALCO, M. TAFFETANI, Multiscale numerical modeling of nanoparticle transport in tumor tissues

G. COPIE, S. CARILLO, C. KRZEMINSK, F. CLERI, C. DELERUE, Y. VIERO, S. LENFANT, D. GUERIN, D. VUILLAUME, On the modeling of the self-assembly and the electronic transport in self-assembled nanoparticles arrays based on opto-molecular switch

N. MARCHESE, A. CANNULI, S. MAGAZU', I. IELO, C. GIORDANO, A. PARLATO, C. PACE, Neutrons Transport in the Shielding of a Portable Fast Neutron Generator for Indoor Applications

T. M. GARRIDO, M. S. BRUZON, Lie point symmetries and travelling wave solutions for the Generalized Drinfeld-Sokolov system

S. GONZALES-PINTOR, K. JARETEG, C. DEMAZIER, Polar Quadratures for 2-D Neutron Transport

A. D'ANGOLA, G. COLONNA, A. LARICCHIUTA, M. CAPITELLI, Thermodynamic and transport properties of plasmas by using a simplified two-level model

C. R. DRAGO, V. ROMANO, Optimal control for semiconductor diode design based on the MEP energy-transport model

20:30 Concert

Friday morning September 11

Kinetic models in bio and social sciences

9:00-9:30 R. SOUVIK, M. ANNUNZIATO, A. BORZI, *A Fokker-Planck approach to control pedestrian motion*

9:30-9:50 G. ALETTI, A. MENTASTI, G. NALDI, *Kinetic and hydrodynamic models for self-organized interacting populations*

9:50-10:10 D. BURINI, S. DE LILLO, G. FIORITI, *Influence of drivers ability in a discrete vehicular traffic model*

10:10-10:30 M. BOULANOUAR, *On a mathematical model with non-compact boundary conditions describing bacterial population*

10:30-10:50 D. GIUSTI, V.G. MOLINARI, *Production of commodities by means of commodities*

10:50-11:20 coffee break

Kinetic theory of classical particles/continuum derived models (2)

11:20 -11:50 M.C. CARRISI, S. PENNISI, J.M. SELLIER, *A kinetic type exact solution for Extended Thermodynamics of Dense Gases with many Moments*

11:50:12:10 F. PIZZIO, V. MOLINARI, D. MOSTACCI, D. GIUSTI, *Quantum-Relativistic Vlasov Equation and Wave Propagation*

12:10:12:30 L. H. SODERHOLM, *Boundary Conditions for Burnett Equations in a Half-Space*

12:30 closing ceremony

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Taormina, September 7th-11th, 2015

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