



# Open Communications in Nonlinear Mathematical Physics

## The Programme at the Häckers Grand Hotel

### Sunday June 23:    **Arrival Day**

18:00 – 20:00    **Registration**

### Monday June 24:

08:00 – 08:50    **Additional Registration Time**

### **Opening**

09:00 – 09:15    **Norbert Euler**    *Some words of welcome*

### **Morning Session**    Chairperson: Maria Clara Nucci

09:15 – 10:00    **Thanasis Fokas**    *The beauty and power of the complex plane*

10:00 – 10:35    **Sandra Carillo**    *Bäcklund transformations in Abelian and  
non-Abelian nonlinear evolution equations*

10:35 – 11:10    **Rafael Hernández Heredero**    *Formal diagonalisation of integrable systems  
of evolution equations*

*Coffee Break*    11:10 – 11:50

11:50 – 12:25 **Henrik Aratyn** *Orbit method for obtaining rational special function solutions of Painlevé V Hamilton equations*

12:25 – 13:00 **Robert Conte** *Common solutions to two Bianchi IX systems*

*Lunch Break* 13:00– 14:30

### **Afternoon Session** Chairperson: Frank Nijhoff

14:30 – 15:05 **Kenji Kajiwara** *Generation of Aesthetic Shapes by Integrable Differential Geometry*

15:05 – 15:40 **Jarmo Hietarinta** *Solutions to the constant Yang-Baxter equation: additive charge conservation in three dimensions*

15:40 – 16:15 **Giorgio Gubbiotti** *On a chain of Lie-Poisson coalgebras and their invariants*

**Welcome Reception:** 16:15 – 17:30

### **Evening Session:** Chairperson: Norbert Euler

**An Evening of Science and Philosophy:** 19:00 – 20:45

19:00 – 19:15 **Oliver Krügel (Mayor)** *Words of welcome*

19:15 – 20:00 **Thanasis Fokas** *The two “big bangs” of our mental evolution*

20:00 – 20:45 **Adrian Constantin** *Geophysical flows and waves*

## **Tuesday June 25:**

### **Morning Session** Chairperson: Kenji Kajiwara

09:00 – 9:45 **Frank Nijhoff** *Lagrangian multiform structure of discrete, semi-discrete and “generating” PDE type KP systems*

09:45 – 10:20 **Derchyi Wu** *Stability of KdV  $n$ -solitons*

10:20 – 10:55 **Błażej Szablikowski** *Non-autonomous deformations of integrable soliton hierarchies*

*Coffee Break* 10:55 – 11:35

11:35 – 12:10 **Maria Clara Nucci** *A review of two and three-dimensional superintegrable systems that are linearized through hidden symmetries*

12:10 – 12:45 **Colin Rogers** *On Korteweg-de Vries and reciprocal moving boundary problems*

*Lunch Break*     12:45– 14:15

## **Afternoon Session**     Chairperson: Wolfgang K. Schief

14:15 – 15:00   **Arthemy Kiselev**     *The (non)triviality problem for Kontsevich's deformations of Nambu–Poisson brackets*

15:00 – 15:35   **Jose F. Gomes**     *Integrable hierarchies, soliton solutions and infinite dimensional algebras*

15:35 – 16:10   **Masashi Hamanaka**     *Solitons in 4d Wess-Zumino-Witten models – Towards unification of integrable systems*

*Coffee Break*     16:10 – 16:50

16:50 – 17:25   **Maria L. Gandarias**     *Symmetry multi-reduction for PDEs with invariant conservation laws*

17:25 – 18:00   **Jen-Hsu Chang**     *Totally non-negative Pfaffian for solitons in BKP equation*

*Social Dinner*   19:30 – 22:00   **Lahnterrasse: Ristorante & Pizzeria** (Wilhelmsallee 11, Bad Ems)

## **Wednesday June 26:**

### **Morning Session**

#### **Discussions and Collaborations**

11:00 – 12:30     **ISNMP Meeting** (members only)

*Lunch Break*     13:00– 14:30

### **Excursion**

14:30                Bus departures from Bad Ems Main Train Station.

15:00                Bus arrives at *Deutsches Eck* in Koblenz.

15:30 – 17:00       English Guided Tour of the Koblenz Old Town (*Altstadt*)

17:00                Guided Tour ends at *Deutsches Eck*

17:00 – 19:00       Your free time in Koblenz

19:00                Bus departures from *Deutsches Eck*

19:30                Bus arrives in Bad Ems: end of excursion

## Thursday June 27:

### Morning Session

Chairperson: Sandra Carillo

- 09:00 – 9:45    **Da-jun Zhang**    *Elliptic solitons and related problems*
- 09:45 – 10:20    **Ralph Willox**    *Singularities and growth of higher order discrete equations*
- 10:20 – 10:55    **Irina Bobrova**    *Affine Weyl groups and non-abelian discrete systems*

*Coffee Break*    10:55 – 11:35

- 11:35 – 12:20    **Wolfgang K. Schief**    *The differential geometry of the multi-dimensionally consistent TED equation*
- 12:20 – 13:00    **Roman Kozlov**    *Lagrangian formalism and Noether-type theorems for second-order delay ordinary differential equations*

*Lunch Break*    13:00– 14:30

### Afternoon Session

Chairperson: Da-Jun Zhang

- 14:30 – 15:15    **Krzysztof Marciniak**    *Algebraic curves as a source of separable multi-Hamiltonian systems*
- 15:15 – 15:50    **Maciej Błaszak**    *From Stäckel systems to Painlevé hierarchies*
- 15:50 – 16:25    **Anouchah Latifi**    *Wind-wave interaction in finite depth: linear and nonlinear approaches, blow-up and soliton breaking in finite time, integrability perspectives*
- 16:25 – 17:00    **Huimin Yin**    *Stability of doubly periodic patterns by using Floquet analysis*

*Coffee Break*    17:00 – 17:40

### PhD Students Session

Chairperson: Thomas Wolf

- 17:40 – 18:05    **Aroonima Sahoo**    *Linear control system on Lie supergroup and its controllability*
- 18:05 – 18:30    **Tofan Khunitia Kumar**    *Isoclinism and relative central extensions of a pair of Lie superalgebras*
- 18:30 – 18:55    **Pavel Drozdov**    *The two-photon coalgebra symmetry and discrete-time systems in quasi-standard form*

## On Open Access Publishing

Chairperson: Norbert Euler

18:55 – 19:30 **Raphaël Tournoy** *Episciences overlay journals and their place in the open access landscape*

## Friday June 28:

### Morning Session

Chairperson: Rafael Hernández Heredero

09:00 – 9:35 **Thomas Wolf** *Exact Solitary Wave Solutions for a Coupled gKdV-NLS System*

09:35 – 10:10 **Nobuyuki Sawado** *Long-lived vortices in a sheared flow of the intermediate geostrophic regime*

10:10 – 10:45 **Kouichi Toda** *Traveling wave solutions for a static version of the Zakharov-Kuznetsov equation via the Painlevé analysis*

*Coffee Break* 10:45 – 11:25

11:25 – 12:00 **Maria C. Muriel** *First integrals and  $C^\infty$ -structures for ordinary differential equations*

12:00 – 12:35 **Adrian Ruiz** *On the calculation of exact solutions to a family of general Liénard equations*

12:35 – 13:10 **Stephen Anco** *Properties and applications of adjoint-symmetries*

*Lunch Break* 13:10– 14:30

### Afternoon Session

Chairperson: Concepcion Muriel

14:30 – 15:05 **Xiao-Chuan Liu** *On dynamics of solitary waves solutions for the generalized Camassa-Holm equation*

15:05 – 15:40 **Ruoxia Yao** *Supersymmetries of a new supersymmetric dispersionless system and the classifications*

15:40 – 16:15 **M & N Euler** *Fully-nonlinear evolution equations: the Schwarzian derivative, recursion operators and integrability*

## Auf Wiedersehen!

16:15 **Norbert Euler** *Some short closing statements*

## Saturday June 29: Departure Day