

Algebro-Geometric Methods in Gauge Theory and General Relativity

September 12 – 16, 2011; Hanse-Wissenschaftskolleg, Delmenhorst

Organiser: Claus Lämmerzahl, Victor Enolskii, Jutta Kunz, Emma Previato

Monday 12.9.2011

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09:30 - 09:50 Opening

09:50 - 10:40 V. Enolskii (Kiev)
To the Existence of Non-Abelian Monopole:
Algebro-Geometric Approach I

10:40 - 11:10 Coffee break

11:10 - 12:00 V. Enolskii
To the Existence of Non-Abelian Monopole:
Algebro-Geometric Approach II

12:00 - 12:50 T. Ioannidou (Thessaloniki)
Monopoles and the Weyl equation

13:00 - 14:30 Lunch

14:30 - 15:20 S. Matsutani (Tokyo)
On a Quantization of a Geometrical Object, Elastica

15:20 - 16:10 E. Previato (Boston)
Special functions in monodromy and physics I

16:10 - 16:40 Coffee break

16:40 - 17:30 E. Previato
Special functions in monodromy and physics II

17:30 - 18:20 E.-M. Feichtner (Bremen)
Tropical geometry

19:00 - 20:30 Dinner

Tuesday 13.9.2011

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09:00 - 09:50 A. Achúcarro (Leiden)
Topology in the sky: Cosmic strings and other defects

09:50 - 10:40 V. Matveev (Dijon)
Degenerate algebroid-geometric solutions to the
integrable nonlinear PDEs and multiple and
extreme rogue waves generation I

10:40 - 11:10 Coffee break

11:10 - 12:00 V. Matveev
Degenerate algebroid-geometric solutions to the
integrable nonlinear PDEs and multiple and
extreme rogue waves generation II

12:00 - 12:50 F. Mueller-Hoissen (Goettingen)
The Ernst equation of General Relativity in the
bidifferential calculus approach

13:00 - 14:30 Lunch

14:30 - 15:20 M. Ansorg (Jena)
The interior of axisymmetric and stationary black holes:
Numerical and analytical studies

15:20 - 16:10 V. Kagramanova (Oldenburg)
Inversion of general hyperelliptic integrals

16:10 - 16:40 Coffee break

16:40 - 17:30 E. Hackmann (ZARM, Bremen)
Observables for bound orbital motion in axially
symmetric space-times

17:30 - 18:20 B. Hartmann (Jacobs Univ. Bremen)
Elliptic integrals/functions and test particle motion
in cosmic string space-times

19:00 - 20:30 Dinner

Wednesday 14.9.2011

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09:00 - 09:50 C. Athorne (Edinburgh)
Weierstrass gaps and equivariant p-functions

09:50 - 10:40 V. Gritsenko (Lille)
Jacobi theta-series, automorphic discriminants
and Borcherds algebras I

10:40 - 11:10 Coffee break

11:10 - 12:00 V. Gritsenko
Jacobi theta-series, automorphic discriminants
and Borcherds algebras II

12:00 - 12:50 P.L. Christiansen (Copenhagen)
Non-relativistic and relativistic scattering by short-range potentials

13:00 - 14:30 Lunch

Excursion to ZARM (drop tower) and City of Bremen and dinner in Bremen

Thursday 15.9.2011

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09:00 - 09:50 C. Eilbeck (Edinburgh)
Generalized Weierstrass functions, Kummer varieties,
and Coble polynomials

09:50 - 10:40 D. Korotkin (Montreal)
Algebro-geometric solutions of Ernst equation
and Schlesinger system I

10:40 - 11:00 Coffee break

11:00 - 11:50 D. Korotkin
Algebro-geometric solutions of Ernst equation
and Schlesinger system I

11:50 - 12:40 F. Hess (Oldenburg)
Computer algebra for Algebraic Curves

12:40 - 14:00 Lunch

14:00 - 14:50 J. Gibbons (London)
Constructing Benney reductions associated with cyclic
(n,s) curves

14:50 - 15:40 A. Bobenko (Berlin)
TBD

15:40 - 15:55 Coffee break

15:55 - 16:45 H. Uecker (Oldenburg)
Non-existence of solitons

16:45 - 17:35 D. Grieser (Oldenburg)
Geodesics on singular spaces

17:35 - 17:50 Coffee break

17:50 - 18:40 R. de Jong (Leiden)
Green's functions for the Arakelov metric on hyperelliptic
Riemann surfaces I

19:00 - 20:00 Dinner

Friday 16.9.2011

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09:00 - 09:50 R. de Jong
Green's functions for the Arakelov metric on hyperelliptic
Riemann surfaces II

09:50 - 10:40 Y. Fedorov (Barcelona)
Explicit solutions and complex behaviour of
some integrable systems with cubic integrals I

10:40 - 11:10 Coffee break

11:10 - 12:00 Y. Fedorov
Explicit solutions and complex behaviour of
some integrable systems with cubic integrals II

12:00 - 12:50 E. Belokolos (Kiev)
Spectra of the Gaudin models I

12:50 - 13:00 Coffee break

13:00 - 13:50 E. Belokolos
Spectra of the Gaudin models II

13:50 - 14:50 Lunch

End of workshop