

Mathematical Partnership, Parallel Computing and Computer Algebra MathParCa – 2015

Turku – Åbo, Finland
July 27 – August 1, 2015

Program

Sunday, July 26

17:00 – 19:00 Registration. Welcome coffee

Monday, July 27

Location: Hilbert Rummet, ASA, 3rd floor

Chair: Nikolai Vassiliev

9:00 – 10:00 Registration

10:00 – 10:30 Opening

10:30 – 11:00 Gennady Malaschonok
MathParCa – now, in the past and in the future

11:00 – 11:30 Coffee break

11:30 – 12:30 Gennady Malaschonok, Anton Scherbinin
New Algorithm of triangular decomposition

12:30 – 14:00 Lunch

14:00 – 15:00 Vladimir V. Kornyak
Combinatorial approach to description of quantum evolution

15:00 – 15:30 Coffee break

15:30 – 16:30 Round table discussion: Topological methods in dynamical
systems theory.
Chair – Nikolai Vassiliev

Tuesday, July 28

Location: Hilbert Rummet, ASA, 3rd floor

Chair: Tatiana Mylläri

10:00 – 11:00 Evgeny A. Ilchenko

One approach to algorithm of the decentralized management for the distributed computing process

11:00 – 11:30 Coffee break

11:30 – 12:30 Sergey Khvorov, Gennady Malaschonok

Parallel inversion of integer matrix

12:30 – 14:00 Lunch

14:00 – 15:00 Natasha Malashonok

A symbolic-numerical algorithm for solving differential equations with delayed argument

15:00 – 16:30 Round table discussion: Parallel computer algebra.

Chair –Victor Edneral

20:00 – 21:00 Dome Cathedral of Turku: Organ concert

Wednesday, July 29

Location: Hilbert Rummet, ASA, 3rd floor

Chair: Aleksandr Mylläri

10:00 – 11:00 Victor F. Edneral

On natural parallelizm

11:00 – 11:30 Coffee break

11:30 – 12:30 Nikolai Vassiliev

Manipulating with formal Lie series and symplectic integration

12:30 – 14:00 Lunch

14:00 – 15:00 Göran Hognas, Andreas Anckar

Fibonacci-Padovan sequences

15:00 – 15:30 Coffee break

15:30 – 16:30 Tatiana Mylläri, Aleksandr Mylläri, M. Nalbandian,
Tuula O. Jalonen
Statistical analysis of detected pain in patients with sickle cell
disease in Grenada

18:00 – 19:00 City tour

Thursday, July 30

Location: Hilbert Rummet, ASA, 3rd floor

Chair: Victor Edneral

10:00 – 11:00 Thompson Cummings, Makeda Gibbon
A web based Mathematics course for Form 1 (7th graders)
of secondary schools in Grenada

10:00 – 11:30 Coffee break

11:30 – 12:30 Tatiana Mylläri, Thompson Cummings, Aleksandr Mylläri
CAS in teaching basic calculus

12:30 – 14:00 Lunch

14:00 – 15:00 Round table discussion: Computer algebra in education.
Chair – Tatiana Mylläri

15:00 – 15:30 Coffee break

15:30 – 16:30 Round table discussion (cont.): Computer algebra in education.
Chair – Tatiana Mylläri

Friday, July 31

Workshop: Celestial Mechanics and Dynamical Astronomy

Location: Tuorla Observatory

Chair: Hannu Karttunen

9:00 – 10:00 Seppo Mikkola
A brief history of numerical three-body methods

- 10:00 – 10:30 Sverre Aarseth
Trearmans of close encounters
- 10:30 – 11:00 Coffee break
- 11:00 – 11:30 Kiyotaka Tanikava
The general numerical three-body problem in Tokio
- 11:30 – 12:00 Joanna Anosova
50 years of computer simulations in the three-body problem.
Starting period – the first 10 years
- 12:00 – 12:30 Aleksandr Mylläri, Mauri Valtonen, Alexei Pasechnik
Stability criteria of three-body systems
- 12:30 – 14:00 Lunch
- 14:00 – 14:30 Nikolai Vassiliev
Formal integral of symplectic approximation of the Henon-Heiles model
- 14:30 – 14:50 Victor Orlov, Alija Martynova
The motions in vicinity of periodic orbits and quantum effects
- 14:50 – 15:10 Vladimir Titov
General three body problem in form space
- 15:10 – 15:30 Coffee break
- 15:30 – 15:50 Konstantin Kholshchevnikov, Oleg Bykov
Algorithms of direct methods of orbit's determination
- 15:50 – 16:10 Victor Orlov, Pavel Iasko
Near to periodic orbits in the equal mass free-fall three-body problem
- 16:10 – 16:30 Victor Orlov, Ksenia Shirokova, Sergei Zhuiko
Hypervelocity stars and binary black holes in Galactic centers
- 16:30 – 16:50 Alexander Davydenko
Calculating the orbits of the star bundles in the Galactic tidal field

Saturday August 1

Location: Hilbert Rummet, ASA, 3rd floor

10:00 – 11:30 General discussion

Chair: Aleksandr Mylläri

11:30 – 12:00 Coffee break

12:00 – 12:30 Closing ceremony

12:30 – 14:00 Workgroup meeting