

International Conference on Advanced Scientific Computing

Thursday 12 September 2019 - Saturday 14 September 2019



Book of Abstracts

Contents

Accurate data identification in low signal-to-noise ratio series	1
The CPC Program Library: 50 years of open-source software in computational physics	1
Overview of JINR computing infrastructure	1
Romanian NREN – support for Romanian Research facilities	1
Status and prospects of ATLAS (FR Cloud) computing	1
ALICE Grid Computing resources utilization report and plans for Run 3	1
Real-time conditions data distribution for the Online data processing of the ALICE experiment	1
Data Management services in highly distributed environments: recent achievements of the eXtreme-DataCloud project	1
Monitoring of exascale data processing	2
Jupyter Notebooks as scientific gateways to access cloud computing and distributed storage	2
RO-07-NIPNE in the perspective of the Run 3	2
Deployment and maintenance of an XRootD storage cluster for ALICE	2
EOS deployment at the RO-03-UPB Grid site	2
Migration of the UAIC Grid site in a new configuration	2
Contribution of the RO-14-ITIM Grid site to ATLAS computing: recent upgrades	2
User-friendly expressions for the coefficients in exponential fitting	3
Problem-dependent discretizations of evolutionary problems	3
Quantum-quasiclassical model for calculation of resonant processes in hybrid atom-ion traps	3
Adapted two step peer methods for advection diffusion problems	3
Challenges in Mathematical Modeling and Computational Physics in LIT-JINR on 2020–2023	3
Analyzing Data generated by the High Power Laser System in ELI-NP	3

Cluster monitoring system of the Multifunctional Information and Computing Complex (MICC) LIT	3
A Research Management System based on Rdf Graphs	4
Cloud computing, HTC, and HPC services at NGI-RO	4
A tribute to Liviu Ixaru, developer of successful CP-algorithms	4
Solving Quasi-exactly solvable differential equation by a canonical polynomials approach	4
Finite Element Method and Programs for Investigation of Quantum Few-Body Systems	4
Algorithms for Generating in Analytical Form Interpolation Hermite Polynomials in Hypercube	4
PySlise: a Python Package for solving Schrödinger Equations	5
Modelling high precision spectroscopy experiments	5
Gibbs Phenomenon in Clenshaw-Curtis Quadrature	5
Application of the fragment molecular orbital method to the investigation of antimicrobial peptides interaction with membrane models	5
Molecular dynamics simulations on the interaction between a silver nanoparticle and lipid monolayers	5
Distributed bioinformatics analyses on an SGE cluster, for variant calling on bovine whole-genome samples	5
Evolution of quantum correlations in Gaussian bosonic channels	5
The quantum dynamics of a two-qubit pair longitudinally coupled with a single-mode boson field	6
Uhlmann Fidelity of Two Bosonic Modes in a Thermal Bath	6
Lasing and cooling effects of a quantum oscillator coupled with a three-level lambda - type system	6
Fidelity of teleportation for two mode Gaussian resource states in a thermal bath	6
Representing Character Sequences as Sets. A simple and intuitive string encoding algorithm for text data cleaning	6
Speeding up atomistic DFT simulations by machine learning methods	6
Software developments for experimental data processing in NICA projects	6
Improving cooling by airflow control inside Data Center - model and simulation	7
Detection and Validation of Asteroids using the NEARBY Software Platform	7
Development of cloud computing, HTC, and HPC services at NGI-RO	7
Overview of JINR computing infrastructure - Part One: Past and Present	7

23

Accurate data identification in low signal-to-noise ratio series

24

The CPC Program Library: 50 years of open-source software in computational physics

25

Overview of JINR computing infrastructure

26

Romanian NREN – support for Romanian Research facilities

27

Status and prospects of ATLAS (FR Cloud) computing

28

ALICE Grid Computing resources utilization report and plans for Run 3

29

Real-time conditions data distribution for the Online data processing of the ALICE experiment

30

**Data Management services in highly distributed environments:
recent achievements of the eXtreme-DataCloud project**

31

Monitoring of exascale data processing

32

Jupyter Notebooks as scientific gateways to access cloud computing and distributed storage

33

RO-07-NIPNE in the perspective of the Run 3

34

Deployment and maintenance of an XRootD storage cluster for ALICE

35

EOS deployment at the RO-03-UPB Grid site

36

Migration of the UAIC Grid site in a new configuration

37

Contribution of the RO-14-ITIM Grid site to ATLAS computing: recent upgrades

38

User-friendly expressions for the coefficients in exponential fitting

39

Problem-dependent discretizations of evolutionary problems

40

Quantum-quasiclassical model for calculation of resonant processes in hybrid atom-ion traps

41

Adapted two step peer methods for advection diffusion problems

42

Challenges in Mathematical Modeling and Computational Physics in LIT-JINR on 2020–2023

43

Analyzing Data generated by the High Power Laser System in ELI-NP

44

Cluster monitoring system of the Multifunctional Information and Computing Complex (MICC) LIT

45

A Research Management System based on Rdf Graphs

46

Cloud computing, HTC, and HPC services at NGI-RO

47

A tribute to Liviu Ixaru, developer of successful CP-algorithms

48

Solving Quasi-exactly solvable differential equation by a canonical polynomials approach

49

Finite Element Method and Programs for Investigation of Quantum Few-Body Systems

50

Algorithms for Generating in Analytical Form Interpolation Hermite Polynomials in Hypercube

51

PySlise: a Python Package for solving Schrödinger Equations

52

Modelling high precision spectroscopy experiments

53

Gibbs Phenomenon in Clenshaw-Curtis Quadrature

54

Application of the fragment molecular orbital method to the investigation of antimicrobial peptides interaction with membrane models

55

Molecular dynamics simulations on the interaction between a silver nanoparticle and lipid monolayers

56

Distributed bioinformatics analyses on an SGE cluster, for variant calling on bovine whole-genome samples

57

Evolution of quantum correlations in Gaussian bosonic channels

58

The quantum dynamics of a two-qubit pair longitudinally coupled with a single-mode boson field

59

Uhlmann Fidelity of Two Bosonic Modes in a Thermal Bath

60

Lasing and cooling effects of a quantum oscillator coupled with a three-level lambda - type system

61

Fidelity of teleportation for two mode Gaussian resource states in a thermal bath

62

Representing Character Sequences as Sets. A simple and intuitive string encoding algorithm for text data cleaning

63

Speeding up atomistic DFT simulations by machine learning methods

64

Software developments for experimental data processing in NICA projects

65

Improving cooling by airflow control inside Data Center - model and simulation

66

Detection and Validation of Asteroids using the NEARBY Software Platform

70

Development of cloud computing, HTC, and HPC services at NGI-RO

71

Overview of JINR computing infrastructure - Part One: Past and Present