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Nationality : Canadian & Serbian

SENIOR MANAGER POSITIONS:

- 2018. – 2019. Assistant Director for Information and Accelerator Technology, “Vinca” Institute of Nuclear Science
- 2015. – 2017. Chair of Scientific Council, “Vinca” Institute of Nuclear Science

EDUCATION & TRAINING:

Ph.D. in Physics, (1998) University of Belgrade, Belgrade, Serbia.

Title of Ph.D. thesis: Global scaling and method of modular smoothing for typical Hamiltonian systems with two degrees of freedom.

Master of Science (M.Sc.) in Physics, (1994) University of Belgrade, Belgrade, Serbia.

Title of M.Sc. thesis: Simultaneous excitation and charge exchange in fast collision between nucleus and two-electron atomic systems.

Bachelor of Science (B.Sc.) in Physics, (1990) University of Belgrade, Belgrade, Yugoslavia.

Title of B.Sc. thesis: Application of nonlinear transformation in singular theory of perturbation.

Training:

- 2005. – 2006. Montreal General Hospital, McGill University, Montreal, Canada, Medical Physics: Interactions of charged particle beams with matter, Absolute and relative dosimetry techniques, Calibration methods for orthovoltage and megavoltage photon beams and megavoltage electron beams Medical linear accelerators, cobalt units, Orthovoltage and superficial x-ray units, Radiation detectors and counting systems, Mechanisms of scintillation. Scintillation detectors., Mammography, fluoroscopy, digital radiography, Isodose distributions and percentage depth dose.
- 2003. New Horizons Learning Centre, Canberra, Australia, Sun Certified System Administrator for Solaris 8.

Key Areas of Expertise:

- Nuclear and Radiation Physics
 - Health Physics and Radiology
 - High Energy Physics
 - Atomic and Solid-state physics
 - Nonlinear Dynamics
 - Computational Physics
 - Distributed Computing
 - Software Development
 - Cloud Computing and Virtualization
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PROFESSIONAL EXPERIENCE:

- **2019. – present, Institute of General and Physical Chemistry, Belgrade, Serbia
Research Professor**

Study of heterogeneous catalysts in applications of hydrogen as an energy source in the global clean energy system of tomorrow.

- **2007. – 2019. “Vinca” Institute of Nuclear Sciences, Belgrade, Serbia
Research Professor**

2007. – 2011. High energy physics: ATLAS Experiment, H1 Collaboration and Software Development for Experiments Group CERN.

2011. – 2019. Physics and chemistry with ion beams, application of Data-Flow programming model in scientific high performance computing.

2019. Hydrogen energy - development of new materials: electrolytic production of hydrogen, hydrogen fuel cells.

- **2010. – 2011. The European Organization for Nuclear Research (CERN), Geneva, Switzerland, Software Development for Experiments Group, PH Department
Project Associate**

Cloud Computing – Design and development of virtual computer farm for the NA61 Experiment based on virtual software appliance for use by LHC experiments at CERN (CernVM).

- **The European Organization for Nuclear Research (CERN), Geneva, Switzerland, ATLAS Collaboration
Visiting Scientists as a member of ATLAS Collaboration 2007. – 2010.**

Study of minimum bias collision events for the ATLAS Experiment.

Production of Monte Carlo data on the LHC-Grid.

- **Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany, H1 Collaboration
Visiting Scientists as a member of H1 Collaboration 2007. – 2010.**

Diffraction Dstar Analysis - measurement of diffractive charm reduced cross-section.

Monte Carlo simulation (H1 detector) - development and the coordination of the production on the LHC Grid.

- **2005. – 2006. Montreal General Hospital, McGill University, Montreal, Canada
Medical Physics Trainee**

Calibration methods for orthovoltage and megavoltage photon beams and megavoltage electron beams.

Medical linear accelerators, cobalt units, X-ray generators in radiology.

Radiation detectors and counting systems, Scintillation detectors.

- **2000. – 2004. Geodesy&GPS, Minerals & Geohazard Division of Geoscience Australia, Canberra, Australia
System Analyst / Supporting scientists**

Coordinating development, data communication, quality statistics and distribution requirements for Australian Regional GPS Network.

Coordinating local activities with International organizations on GPS data standards and specifications.

Design and implementation of source code for real time Global Positioning System (GPS) data collection system.

- **1999. – 2000. Research School of Physical Sciences & Engineering, ANU, Canberra, Australia Visiting Fellow**

Nonlinear Optics - Numerical modeling of interaction of two incoherent laser beams derived from a frequency doubled Nd:YAG laser with Photorefractive Strontium-Barium-Niobate (SNB) crystal.

- **1991. – 1999. Institute of Physics, University of Belgrade, Belgrade, Yugoslavia Research Fellow**

Nonlinear Physics - Hamiltonian Systems, Fractal Sets, Plasma physics, Numerical Simulation of nonlinear partial equations, Biophysics, Ion-Atom Collision.

HONORS:

- **01/10/2010 – 31/03/2011 CERN Fellowship (Project Associate)
The European Organization for Nuclear Research (CERN), Geneva, Switzerland.**
- **01/05/2007 – 31/09/2010 Deutsche Forschungsgemeinschaft (DFG)
Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany.**
- **01/12/1999 – 01/09/2000 Visiting Fellow
Research School of Physical Sciences & Engineering, ANU, Canberra, Australia.**

INVITED TALKS:

- **Local protein structure prediction by Bayesian probabilistic approach principle**
Theoretical Approaches to BioInformation Systems - TABIS 2013, Belgrade, 17-22 September
- **Blueprint of Persistent Infrastructure as a Service for NA61**
“Enabling long term data preservation using virtualization technology”
NA61 Collaboration Meeting in Warsaw, 15–19 February 2011, on behalf of the Software Development for Experiment Group, CERN.
- **PH SFT activity on NA61 virtualization**
NA61 Collaboration Meeting at CERN, 11-14 October 2010, On behalf of the Software Development for Experiment Group, CERN.
- **Precision Tests of QCD Using Final State Jets and Particles**
On behalf of the H1 and ZEUS Collaborations Lake Louise Winter Institute 15th-20th February 2010, Alberta, Canada.
- **Kick Start of Diffractive D* Analysis**
Status Report, H1 Collaboration meeting 2010, Kirchhoff Institute of the University of Heidelberg, Germany.
- **Virtualization of Tier 2 site and LCG Grid Data Distributed Management**
Fundamental Interaction – Serbia, 26-28. September 2007, Novi Sad, Serbia.

NUMBER OF PUBLICATIONS & CITATIONS:

- 196 publications in peer reviewed journals.
 - Citations: 12685.
 - *h-index* 57
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LIST OF SELECTED PAPERS:

- Comparison of Pt and Pd anode catalysts supported on nanocrystalline Ru-SnO₂ for ethanol oxidation in fuel cell applications
Milica P. Marčeta Kaninski, Zoran V. Šaponjić, Mihajlo D. Mudrinić,
Dubravka S. Milovanović, Boris M. Rajčić, Aleksandra M. Radulović and Vladimir M. Nikolić
International Journal of Hydrogen Energy 46 (77) , pp.38270-38280
 - Ion Beam Analysis of fusion plasma-facing components and materials: Facilities and Research Challenges
M. Mayer, S. Möller, M. Rubel, A. Widdowson, S. Charisopoulos, T. Ahlgren, E. Alves, N.P. Barradas, S. Donnelly, S. Fazinić, K. Heinola, O. Kakuee, H. Khodja, A. Lagoyannis, Meimei Li, S. Markelj, M. Mudrinić, P. Petersson, I. Portnykh, D. Primetzhofer, P. Reichart, T. Silva, Wang Yongqiang
Nuclear Fusion, Volume 60, Number 2, 025001 (2020)
 - Local Protein Structure Prediction by Bayesian Probabilistic Approach Principle
Proceedings of the 2nd International Conference “Theoretical Approaches to BioInformation Systems”, ISBN: 978-86-82441-40-3, (2014)
 - Combined search for the Standard Model Higgs boson using up to 4.9 fb⁻¹ of pp collision data at root s=7 TeV with the ATLAS detector at the LHC
G. Aad, M. Mudrinić, et al. [ATLAS Collaboration],
Phys. Lett. B, 710(1), 49, 17pp, (2012).
 - A practical approach to virtualization in HEP
Buncic P., Sanchez C., Blomer J., Harutyunyan A., Mudrinić M.
EUROPEAN PHYSICAL JOURNAL PLUS, 126(1), 13, (2011).
 - Measurement of the inclusive e^(+/-) p scattering cross section at high inelasticity y and of the structure function F₂
F. D. Aaron, M. Mudrinić, et al. [H1 Collaboration],
Eur. Phys. J. C 71(3), 1579, 50pp, (2011).
 - The ATLAS Simulation Infrastructure
G. Aad, M. Mudrinić, et al. [ATLAS Collaboration],
Eur. Phys. J. C 70(3), 823, 52pp (2010).
 - H1 Grid Production Tool for Large Scale Monte Carlo Simulation
Lobodzinski B, Bystritskaya E, Karbach T M, Mitsyn S, Mudrinić M, Vorobiew M, Wissing C
17TH INTERNATIONAL CONFERENCE ON COMPUTING IN HIGH ENERGY AND NUCLEAR PHYSICS (CHEP09) Book Series: Journal of Physics Conference Series Vol. 219 Article Number: 072040 (2010)
 - Combined measurement and QCD analysis of the inclusive e^(+/-)p scattering cross sections at HERA, F. D. Aaron, M. Mudrinić, et al. [H1 Collaboration],
JOURNAL OF HIGH ENERGY PHYSICS Issue: 1, 109 (2010).
 - Search for single top quark production at HERA
F. D. Aaron, M. Mudrinić, et al. [H1 Collaboration],
Phys. Lett. B 678(5) 450, (2009).
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- Multi-lepton Production at High Transverse Momenta in e-p Collisions at HERA
F. D. Aaron, M. Mudrinić, et al. [H1 Collaboration],
Phys. Lett. B 668(4), 268, (2008).
 - Time delay in a basic model of the immune response
N. Burić, M. Mudrinić and N. Vasović
Chaos, Solitons and Fractals 12, 483, (2001).
 - Efficient and accurate calculations of stability bounds in Hamiltonian system
N. Burić, M. Mudrinić, and D. Timotijević
Phys. Rev. E 54, 1463, (1996).
 - Two-electron capture from helium by fast alpha particles
Dz. Belkić, I. Mancev and M. Mudrinić
Phys. Rev. A 49, 3646, (1994).
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