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SLOVAK ACADEMY OF SCIENCES

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- A&M DATA - MODELLING

Based on lectures presented at
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in Plasmas: Advances in Standards and Modelling
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CONTENTS

List of participants	6
Preface	11
F. Arnaut, A. Kolarski, V.A. Srećković, M. Langović and S. Jevremović: Standardization framework of ionospheric Very Low Frequency (VLF) signal amplitude classes for machine learning-based anomaly detection: from calm ionospheric conditions to solar activity-induced dynamics	13
V. Borka Jovanović, D. Borka and P. Jovanović: The baryonic Tully-Fisher relation and Fundamental Plane in the light of f(R) gravity	24
M. S. Dimitrijević, M. D. Christova and S. Sahal-Bréchet: On the Stark broadening of N II spectral lines	34
M.S. Rabasović, B. Predojević, D. Šević and B.P. Marinković: Electron energy loss spectra of magnesium in autoionization region	54
N.M. Sakan, V.A. Srećković, Z. Simić and M. Dechev: Modeling optical processes in dense astrophysical and laboratory plasmas: dipole moment and pseudo potential	62
Z. Simić, M. S. Dimitrijević and N. Sakan: Stark broadening parameters for 6s 4F - 6p $^4(D, F, G)^o$ supermultiplet of singly ionized Hafnium	69
V.A. Srećković, B.P. Marinković, Lj.M. Ignjatović and V.Vujčić: MolD, EMol and ACol atomic and molecular databases for astrophysics: current stage and new directions of development	81
V.A. Srećković, A. Kolarski, M. Langović, F. Arnaut, S. Jevremović and Z.R. Mijić: The strongest solar flares of Solar Cycle 25 and their subionospheric impact: data and modeling	88
V.Vujčić, V.A. Srećković, S. Babarogić and J. Aleksić: An overview of astronomical transient brokers in Rubin era	95
N. Veselinović, M. Savić, D. Maričić, F. Šterc, R. Banjanac, D. Joković and A. Dragić: Some features in the time series of energetic protons measured at L1 during November 2001	106
M. S. Dimitrijević, F. Iacob and S. Sahal-Bréchet: On the Stark broadening of O I spectral lines: Comparison with experiments	114

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Astrophysical Spectroscopy
- A&M DATA - Modelling

Edited by

Vladimir A. Srećković, Milan S. Dimitrijević, Aleksandra Kolarski,
Mihailo R. Savić, Nikola B. Veselinović

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PREFACE

This Special Issue on Astrophysical Spectroscopy: A&M DATA - Modelling contains selected papers from the International Meeting on Data for Atomic and Molecular Processes in Plasmas: Advances in Standards and Modelling. The conference was held from November 12 to 15, 2024, at a venue near Lake Palić, in northern Serbia. The meeting covered a wide range of topics, from fundamental studies to applications, bringing together scientists from the fields of physics, astro- and geophysics, who are engaged in various aspects of astrophysical spectroscopy, plasma physics, atomic and molecular data, databases, and Earth observation. The latest results were presented and discussed, spanning topics such as plasma physics, astrophysics, geophysics, astronomy, and related fields. The efficiency of theoretical analysis, synthesis, and modeling of various environments depends significantly on atomic data and their sources. For example, the modeling of stellar atmospheres and opacity calculations requires a vast amount of atomic data, especially since the chemical composition of a stellar atmosphere is not known a priori. Similarly, atomic data are crucial for Earth observation. Consequently, the development of databases containing atomic data, as well as advancements in astro-geoinformatics, plays an important role. This meeting provided an opportunity to address the above-mentioned aspects of spectroscopic research in plenary sessions, followed by collaborative work on special mini-projects designed to result in joint publications in international scientific journals. The conference was attended by 51 participants from 14 countries. Participants presented 7 invited lectures, 4 regular talks, 16 poster presentations, and engaged in six mini-sessions. This Special Issue contains 11 articles, covering the main themes of the conference. All papers in this issue have undergone rigorous peer review. Each submission was reviewed by at least two reviewers. The organizers would like to express their gratitude to the Ministry of Science, Technological Development, and Innovation of the Republic of Serbia for their support. We also thank the members of the scientific and local organizing committees for their assistance in planning and running the conference. The editors are particularly grateful to the reviewers for their efforts in evaluating all contributions. Finally, we acknowledge the support of the journal Contributions of the Astronomical Observatory Skalnaté Pleso. Materials from this and previous meetings, including the program, presentations, proceedings, and photos, are available at <https://aspectro.ipb.ac.rs/2024/>.

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