

II Workshop on Astrophysical spectroscopy Vruci 9-13. October 2013.

Scientific Organizing Committee

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Local Organizing Committee

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Aleksandra Nina, Institute of Physics, Zemun

Vladimir Srećković, Institute of Physics, Zemun

Venue

The workshop will be held in Hotel “Vrjci” in Banja Vrjci (see web site: <http://www.hotelvrjci.org/>).

Scientific rationale

Spectroscopy is a power tool for the analysis of radiation from different plasmas in astronomy, laboratory, fusion research and industry. The investigation of nature of the emitting ionized gas in galactic nuclei is one of important subjects in astrophysics today. Investigating the processes in the central parts of these objects, we can learn about the innermost parts of other 'normal' galaxies. Moreover, AGN are the most powerful sources, located at different cosmological time-scales, and their investigation is cosmologically important. Additionally, a part of emission from these objects (e.g. in the X-rays) has its origin very close to a massive black hole, and investigation of this emission can help us understand the physical processes in a strong gravitational field.

On the other side, a number of AGN are affected by gravitational lensing effect. Studies aimed at determining the influence of microlensing on spectra of lensed quasars (hereafter QSOs) ought to account for the complex structure of the QSO central emitting region. Since the sizes of the emitting regions are wavelength-dependent, microlensing by stars in a lens galaxy will lead to a wavelength-dependent magnification.

Efficace theoretical analyzis, synthezis and modelling of stellar spectra as well as the spectra from other plasma sources, depends on atomic data and their sources. In particular for the modeling of stellar atmospheres and opacity calculations a large number of atomic data is needed, since we do not know a priori the chemical composition of a stellar atmosphere. Consequently the development of databases with atomic data and astroinformatics is important for stellar spectroscopy.

Investigation of spectral line profiles is of significance for various research fields not only in astrophysics, where, for example, by analysis of stellar line profiles we can obtain effective temperature, chemical composition, surface gravity and other data on the investigated star, but also for a number of topics in physics and technology

The workshop is planned as an opportunity to consider above mentioned aspects of spectroscopic research on plenary sessions and than to work on the special mini-projects, which will result in common papers to be published in international astronomical journals) during the workshop.

PROGRAM

Wednesday 09.10.2013

10:00-11:30 Arrival and registration

11:30-12:00 Opening ceremony

Chairman: **Luka Č. Popović**

12:00-12:40 Invited lecture **Milan S. Dimitrijević**: ASTROPHYSICAL SPECTROSCOPY: RESEARCH ON SPECTRAL LINE SHAPES

12:40-13:20 Invited lecture **Alla Shapovalova**: LONG TERM MONITORING ON BROAD LINE AGN

13:30-15:00 Lunch

15:00-18:00 Work in Sections 1-4 on Mini-projects

19:00 Dinner

Thursday 10.10.2013

Chairperson: **Alla Shapovalova**

10:30-11:10 Invited lecture **Vladimir Srećković**, A. A. Mihajlov, Lj. M. Ignjatović: THE QUASI-MOLECULAR ABSORPTION BANDS IN UV AND EUV REGION CAUSED BY THE NON-SYMMETRIC ION-ATOM PROCESSES IN THE HELIUM RICH WHITE DWARF ATMOSPHERES

11:10-11:50 Invited lecture **Zoran Simić**: ON THE STARK BROADENING IN STELLAR ATMOSPHERES

12:00-14:00 Lunch

14:00-18:00 Work in Sections 1-4 on Mini-projects

Friday 11.10.2013

09:00-16:00 Excursion: Monastery Ćelije (<http://tov.rs/?p=1138>) and Brankovina (<http://tov.rs/?p=1145>)

17:00-19:00 Work in Sections 1-4 on Mini-projects

Saturday 12.10.2013

Chairperson: **Vladimir Srećković**

11:00-11:40 Invited lecture **Darko Jevremović**: SERBIAN INVOLVMENT IN LSST

11:40-12:20 Invited lecture **Magdalena Christova**: TBD

12:20-12:50 Invited lecture **Nataša Bon**: DIAGNOSTIC FOR COMPOSITE GALACTIC SPECTRA IN HII GALAXIES

12:50-13:05 Short talk **Jelena Kovačević**: THE CORRELATIONS BETWEEN UV AND OPTICAL SPECTRAL PROPERTIES

13:30-15:00 Lunch

15:00-18:00 Work in Sections 1-4 on Mini-projects

20:00 Conference Dinner

Sunday 13.10.2013

Chairman **Darko Jevremović**

11:00-11:40 Invited lecture **Luka Č. Popović**: ESTIMATION OF THE SUPERMASSIVE BLACK HOLE MASS USING SPECTRO-POLARIMETRIC OBSERVATIONS IN THE BROAD LINES

11:40-12:20 Invited lecture **Edi Bon**, P. Jovanović, P. Marziani, A. I. Shapovalova, L. Č. Popović, N. Bon: LONG TERM MONITORING OF AGN SPECTRA AND DETECTION OF SUPERMASSIVE BINARY BLACK HOLES

12:20 Closing ceremony

12:30-14:00 Lunch

14:30 Departure

SECTIONS

S1 Spectroscopy of Active galactic nuclei (Coordinator Luka Č. Popović)

S2 Astrophysical plasmas (Coordinator Anatolij Mihajlov)

S3 Astrominformatics and spectroscopic research (Coordinators Darko Jevremović and Milan S. Dimitrijević)

S4 Spectral line profiles in stellar and laboratory plasmas (Coordinator Milan S. Dimitrijević)

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