

## Monday, June 3

15:30 – 17:00 Arrival and registration

17:00 – 17:30 *Opening ceremony with coffee&tea*

### SPECTRAL LINE SHAPES IN GENERAL

Chairs: Evgeny Stambulchik

17:30 – 18:00 **Christian Parigger**: Laboratory hydrogen laser-plasma and white-dwarf stars line shapes

18:00 – 18:30 **Peter van Hoof**: Current and future development of the photoionisation code CLOUDY

18:30 – 19:00 **Hervé Lamy**: Polarisation of Auroral line emissions on Earth: a review

19:00 – 21:00 *Welcome reception*

## Tuesday, June 4

### SPECIAL SESSION: AGN VARIABILITY, DEDICATED TO ALLA I. SHAPOVALOVA

Chair: Sergei Dodonov

9:00 – 9:30 **Luka Č. Popović**: Spectral lines and supermassive black hole mass measurements

9:30 – 10:00 **Pu Du**: Signatures of close binaries of supermassive black holes from reverberation

10:00 – 10:20 Saša Simić: Variability in super massive black hole binaries

10:20 – 10:40 Edi Bon: Possible SMBBH signatures in some AGN broad emission lines

10:40 – 11:00 Wolfram Kollatschny: MUSE observations of the merging AGN system NGC 6240

11:00 – 11:30 *Coffee&tea break*

### SPECIAL SESSION: AGN VARIABILITY, DEDICATED TO ALLA I. SHAPOVALOVA

Chair: Dragana Ilić

11:30 – 12:00 **Bozena Czerny**: Modelling broad emission lines in active galactic nuclei

12:00 – 12:30 **Victor L. Afanasiev, Elena Shablovinskaia**: Active galactic nuclei in polarized light

12:30 – 13:00 **Gisella De Rosa**: Emission line variability in the AGN STORM dataset

13:00 – 13:20 Anđelka Kovačević: Periodicity detection in the broad line and continuum light curves of active galactic nuclei

13:20 – 13:40 Nemanja Rakić: Variability of emission lines of large sample of type 1 AGN from the SDSS-RM project

13:40 – 15:00 *Lunch break*

### SPECTRAL LINE PHENOMENA IN DWARF STARS

Chair: Milan S. Dimitrijević

15:00 – 15:30 **Gillian Peach**: The resonance lines of sodium and potassium in brown dwarf spectra

15:30 – 16:00 **Joel Rosato**: Modeling of hydrogen Balmer lines for the diagnostic of magnetic white dwarf atmospheres

16:00 – 16:20 Dimitrios Tzimeas: Exploring the potential of ASTA software in analysing broad emission and absorption lines

16:20 – 16:40 Antonios Antoniou: Time scale variations of C IV and Si IV P-Cygni profiles in the UV Spectrum of the O-star HD 93521

16:40 – 17:00 *Coffee&tea break*

# 12th Serbian Conference on Spectral Line Shapes in Astrophysics, Vrdnik 2019

SPECTRAL LINES IN ASTROPHYSICAL AND LABORATORY PLASMA  
17:00 – 18:30 Poster session (**3min** presentations)

Chair: Anđelka Kovačević

## Wednesday, June 5

SPECTRAL LINE PHENOMENA IN EXTRAGALACTIC OBJECTS

Chair: Bozena Czerny

- 9:00 – 9:30 **Stefano Ciroi**: Supersoft Be binaries in the Magellanic clouds  
9:30 – 10:00 **Sergei Dodonov, Aleksandra Grokhovskaya**: Study environmental dependence of galaxy properties  
10:00 – 10:20 Paola Marziani: Quasars emission lines as virial luminosity estimators  
10:20 – 10:40 Swayamtrupta Panda: Main Trends of the Main Sequence – the crucial effect of Virial Factor  
10:40 – 11:00 Martin Ochmann: Spectral changes and BLR kinematics of eruptive changing look AGN  
11:00 – 11:30 *Coffee&tea break*

SPECTRAL LINE PHENOMENA IN EXTRAGALACTIC OBJECTS

Chair: Gisella De Rosa

- 11:30 – 12:00 **Palle Møller**: Abs- and em-line profiles of DLA selected galaxies: the signature of dark matter halo profiles  
12:00 – 12:20 Elena Shablovinskaya: Intraday variability of the polarization vector direction in AGN S5 0716+714  
12:20 – 12:40 Evangelia Lyratzi: Variability of Si IV and C IV broad absorption and emission lines of Wolf-Rayet stars, cataclysmic variables, hot emission stars and quasars using GR model and ASTA software  
12:40 – 13:00 Dimitrios Stathopoulos: Multicomponent nature of Ly $\alpha$ , N V, Si IV, C IV BALs of J131912.39+534720.5  
13:00 – 14:00 *Lunch break*  
14:00 *Conference excursion*

## Thursday, June 6

COLLISIONS AND SPECTRAL LINE SHAPES

Chair: Gillian Peach

- 9:00 – 9:30 **Mohammed Koubiti**: Spectral lines issues of hydrogen and impurity emitters in fusion plasmas  
9:30 – 10:00 **Andrei N. Klyucharev**: Autoionization widths of cold Rydberg atomic complexes  
10:00 – 10:20 Vladimir A. Srećković: Chemi-ionization/recombination processes in the broad-line region of AGNs  
10:20 – 10:40 Antonio Ortiz-Mora, Milan S. Dimitrijević: A new method to fit line profiles from plasma with a sum of Voigt profiles  
10:40 – 11:00 Lev Nagli: Polarization Effects in Laser Induced Plasma Lasers (LIPL)  
11:00 – 11:30 *Coffee&tea break*

## 12th Serbian Conference on Spectral Line Shapes in Astrophysics, Vrdnik 2019

### SPECTRAL LINE PHENOMENA IN EXTRAGALACTIC OBJECTS

Chair: Evangelia Lyratzi

- 11:30 – 12:00 **Stefano Bianchi**: Physics of ionized gas in AGN: testing predictions from first principles
- 12:00 – 12:30 **Marco Berton**: Line shapes in narrow-line Seyfert 1 galaxies: a tracer of physical properties?
- 12:30 – 12:50 Maša Lakićević: Mid-infrared and optical spectral line parameters for NLS1 and BLS1 objects
- 12:50 – 13:10 Sina Chen: X-ray spectral properties of NLS1s in the 6DFGS
- 13:10 – 13:30 Daria V. Kozlova: Extended ionized-gas structures in Seyfert 2 galaxy Mrk 78
- 13:30 – 15:00 *Lunch break*

### ATOMIC PARAMETERS AND SPECTRAL LINE SHAPES

Chair: Sylvie Sahal-Bréchet

- 15:00 – 15:30 **Darko Jevremović**: Belgrade nodes of VAMDC: Databases for atomic and molecular collisional and radiative processes needed for spectroscopy
- 15:30 – 15:50 Đorđe Spasojević: On the spectral shapes of Ne II lines recorded from the cathode fall region of an abnormal glow discharge
- 15:50 – 16:10 Ibtissem Hannachi: Simulation calculations of hydrogen lines submitted to oscillating electric fields
- 16:10 – 16:30 Roland Stamm: Satellite spectra for hydrogen perturbed by oscillating fields
- 16:30 – 16:50 Kamel Ahmed Touati: Collisional contribution to the spectral line shape in magnetized plasmas
- 16:50 – 17:10 Mohammed Tayeb Meftah: The influence of the magnetic field on the electric properties in warm and high dense plasma
- 17:10 – 17:30 *Coffee&tea break*

### STARK EFFECT AND SPECTRAL LINE SHAPES

Chair: Roland Stamm

- 17:30 – 17:45 Nebil Ben Nessib: On the stark broadening of some Cr II spectral lines in plasma
- 17:45 – 18:00 Nebil Ben Nessib: Atomic structure of the carbon like ion Ca XV
- 18:00 – 18:20 Abishek Chougule: The impact of improved Stark-broadening widths on the modelling of double-ionized chromium lines in early-type stars
- 18:20 – 18:40 Zlatko Majlinger: Regularities and systematic trends on Lu III Stark widths
- 18:40 – 19:00 Milan S. Dimitrijević: Stark broadening data for spectral lines of rare-earth elements: example of Tb II, Tb III and Tb IV
- 20:00 *Conference Dinner*

## Friday, June 7

### SPECTRAL LINE RESEARCH: NEW FRONTIERS

Chair: Vladimir Srećković

- 10:00 – 10:30 **Alexander Zakharov**: Observational tests of general relativity and alternative theories of gravity with galactic center observations using current and future large observational facilities
- 10:30 – 11:00 **Predrag Jovanović**: Possible observational signatures of supermassive black hole binaries in their Fe K $\alpha$  line profiles
- 11:00 – 11:30 *Coffee&tea break*

## 12th Serbian Conference on Spectral Line Shapes in Astrophysics, Vrdnik 2019

### SPECTRAL LINE RESEARCH: NEW FRONTIERS

Chair: Paola Marziani

- 11:30 – 11:50 Marko Stalevski: Towards a new paradigm of dust structure in AGN: Circinus galaxy and beyond  
11:50 – 12:10 Đorđe Savić: Modeling the broad emission line polarization in active galactic nuclei  
12:10 – 12:30 Milica Vučetić, Dragana Ilić: Emission-lines of the dwarf elliptical galaxy NGC 185

### SPECTRAL LINE RESEARCH: SUMMARY

Chairs: Evgeny Stambulchik, Dragana Ilić

- 12:30 – 13:00 Conference Summary  
13:15 – 13:30 *Official closing of the conference*

13:30 – 14:30 *Lunch break*

14: 30 *Bus departure*

## Posters

1. R. Aloui, H. Elabidi, S. Sahal-Bréchet: QUANTUM-MECHANICAL CALCULATIONS OF Ar XVI LINE WIDTHS
2. A. S. Altowyan, H. Elabidi, N. Ben Nessib: ON THE ATOMIC AND COLLISIONAL STRUCTURE OF THE ION Sc XVI
3. D. Alumot, E. Kroupp, E. Stambulchik, A. Starobinets, I. Uschmann, Y. Maron.: DETERMINATION OF THE ION TEMPERATURE IN A HIGH-ENERGY-DENSITY PLASMA USING THE STARK EFFECT
4. M. Berton, F. Gabrielli, S. Ciroi, G. La Mura: AGN FEEDBACK IN OPTICAL LINES: [O III] PROPERTIES IN FLAT-SPECTRUM RADIO QUASARS AND NARROW-LINE SEYFERT 1
5. N. Bon, P. Marziani, E. Bon: PROBLEMS OF AUTOMATIC IDENTIFICATION OF EXTREME ACCRETING SOURCES
6. E. Chmyreva, G. Beskin: ON SOME ASPECTS OF GALACTIC FEATURELESS-SPECTRUM SOURCES
7. M. Christova, M. S. Dimitrijević, S. Sahal-Bréchet: STARK BROADENING OF B I SPECTRAL LINES
8. M. S. Dimitrijević, A. Bultel: STARK BROADENING OF SPECTRAL LINES WITHIN  $3s^5S^{\circ}-3p^5P$  MULTIPLY OF NEUTRAL OXYGEN
9. M. S. Dimitrijević, V. A. Srećković, Lj. M. Ignjatović: THE  $(n-n')$ -MIXING PROCESSES IN THE HYDROGEN CLOUDS IN BROAD-LINE REGION OF AGNs
10. R. Hamdi, N. Ben Nessib, S. Sahal- Bréchet, M. S. Dimitrijević: ON THE SEMICLASSICAL PERTURBATION STARK SHIFTS OF Ar II SPECTRAL LINES
11. Lj. M. Ignjatović, V. A. Srećković, M. S. Dimitrijević: PHOTOIONIZATION OF THE  $Li_2^+$ ,  $Na_2^+$  AND  $LiNa^+$  MOLECULAR IONS IN ALKALI GEO-COSMICAL PLASMAS

12. D. Ilić, S. Ciroi, V. A. Srećković, M. S. Dimitrijević, L. Č. Popović: THE BROAD LINE REGION PHYSICS IN ACTIVE GALAXIES: ATOMIC PROCESSES IN THE SUPERMASSIVE BLACK HOLE VICINITY
13. I. Jankov, D. Ilić: MACHINE LEARNING AND THE QUASAR EMISSION LINE PROPERTIES
14. J. Kovačević-Dojčinović, M. Lakićević, L. Č. Popović: THE HIDDEN BROAD LINE REGION IN SPECTRA OF SEYFERT 2 GALAXIES
15. J. Kovačević-Dojčinović, L. Č. Popović: THE UV AND OPTICAL Fe II SEMI-EMPIRICAL MODELS AND THEIR APPLICATION FOR AGN TYPE 1 SPECTRA
16. M. Lakićević, L. Č. Popović, J. Kovačević-Dojčinović: UNDERSTANDING OF THE STANDARD MODEL OF AGN THROUGH THE OPTICAL AND MID-INFRARED SPECTROSCOPY
17. S. Marčeta-Mandić, J. Kovačević-Dojčinović, L. Č. Popović, M. Lakićević: THE CONNECTION BETWEEN BROAD H $\beta$  RED ASYMMETRY AND GRAVITATIONAL REDSHIFT IN AGN TYPE 1
18. N. Milovanović, M. S. Dimitrijević: STARK BROADENING PARAMETERS USING SEMICLASSICAL METHOD OF SEVERAL S II MULTIPLETS
19. A. Murmantsev, A. Veklich, V. Boretskij, K. Lopatko: HYDROGEN BALMER SPECTRAL LINES IN SPECTROSCOPY OF UNDERWATER ELECTRIC SPARK DISCHARGE PLASMA
20. A. Nina, V. Čadež, M. Lakićević, L. Č. Popović: X-RADIATION SPECTRA IMPORTANT FOR THE D-REGION IONIZATION DURING SOLAR X-RAY FLARES
21. A. Nina, G. Nico: VARIATIONS IN SAR AND GNSS SIGNAL PROPAGATIONS IN THE LOW IONOSPHERE DUE TO INCREASE IN INTENSITY OF SPECTRAL LINES AND CONTINUUM DURING SOLAR X-RAY FLARES
22. M. Probst, W. Kollatschny: SPECTRAL VARIABILITY OF THE SEYFERT 1 GALAXY WPVS 48
23. H. Rakić, R. Beuc: INFLUENCE OF SPIN-ORBIT INTERACTION ON LONG-RANGE POTENTIAL CURVES OF Cs<sub>2</sub>, Rb<sub>2</sub> AND Rb-Cs MOLECULES
24. N. Rakić, D. Ilić: FITTING THE H $\beta$  LINE IN TYPE 1 AGNs
25. V. A. Srećković, Lj. M. Ignjatović, M. S. Dimitrijević: THE COLLISIONAL ATOMIC PROCESSES: RYDBERG ALKALI ATOMS
26. J. M. Taylor, G. De Rosa, A. King: SPAMM - SPECTRAL PROPERTIES OF AGN MODELED THROUGH MCMC
27. R. Uklein, E. Malygin, A. Grokhovskaya, A. Perepelitsyn: PHOTOMETRIC REVERBERATION MAPPING OF AGNs AT  $0.1 < z < 0.8$
28. M. Vukčević, A. Nina, V. Čadež, L. Č. Popović: THE INFLUENCE OF SOLAR RADIATION FLUX ON POSSIBLE STATIONARY AND LOCALIZED STRUCTURES IN IONOSPHERE