

## SECTION

### Astroparticle Physics, Gravitation and Cosmology

Astronomical Observatory, Taras Shevchenko National University of Kyiv, Observatorna str. 3, Kyiv

**May 24, Wednesday 14:00 – 18:00**

**Chair – Zhdanov V.I.**

**14:00-14:15 Star formation rate in the ultra flat galaxies**

I.D. Karachentsev<sup>1</sup>, V. E. Karachentseva<sup>2</sup>, O. V. Melnyk<sup>3</sup>

<sup>1</sup>SAO RAS, Nizhnii Arkhyz, Russia, <sup>2</sup>MAO NASU, Kiev, Ukraine, <sup>3</sup>University of Zagreb, Zagreb, Croatia

**14:15-14:30 The distribution of dark matter in the halo of nearby giant galaxies**

Yu.N. Kudrya (AO KNU, Kyiv, Ukraine)

**14:30-14:45 Space-time near a cosmological singularity**

S. Parnovsky<sup>1</sup>, W. Piechocki<sup>2</sup>

<sup>1</sup> AO KNU, Kyiv, Ukraine <sup>2</sup>National Centre for Nuclear Research, Warszawa, Poland

**14:45-15:00 On the quantization of charged black holes**

V.D. Gladush

Oles Honchar Dnipro National University, Department of theoretical physics, Dnipro, Ukraine

**15:00-15:15 Quantization of spherically symmetric gravitational field**

M.G. Holovko, V.D. Gladush

Oles Honchar Dnipro National University, Department of theoretical physics, Dnipro, Ukraine

**15:15-15:30 Qualitative analysis of gravitational lens models**

A.N. Alexandrov, AO KNU, Kyiv, Ukraine

**15:30-15:45 Detailed investigation of the X-ray properties of radio loud Sy1 AGN 3C120**

E. Fedorova<sup>1</sup>, B. Hnatyk<sup>1</sup>, V. Zhdanov<sup>1</sup>, A. Vasylenko<sup>2</sup>

<sup>1</sup> AO KNU, Kyiv, Ukraine <sup>2</sup>MAO NASU, Kyiv, Ukraine

**15:45-16:00 Accretion disk structure, relativistic lines and microlensing**

V.I. Zhdanov<sup>1</sup>, E.V. Fedorova<sup>1</sup>, M.V. Khelashvili<sup>2</sup>

<sup>1</sup>AO KNU, Kyiv, Ukraine <sup>2</sup>KNU, Department of Physics, Kyiv, Ukraine

**16:00-16:30 Coffee break**

**16:30-16:45 Scalar field vs hydrodynamic models in homogeneous isotropic cosmology**

V.I. Zhdanov<sup>1</sup>, S.S. Dylida<sup>2</sup>

<sup>1</sup>AO KNU, Kyiv, Ukraine, <sup>2</sup>KNU, Department of Physics, Kyiv, Ukraine

**16:45-17:00 Discontinuous regions of circular orbits around static spherically symmetric configurations in presence of scalar fields**

O.S. Stashko<sup>1</sup>, V.I. Zhdanov<sup>2</sup>

<sup>1</sup> KNU, Department of Physics, Kyiv, Ukraine <sup>2</sup>AO KNU, Kyiv, Ukraine

**17:00-17:15 Gravitationally lensed quasars search program: new double imaged quasar SDSS J1617+3827**

A. V. Sergeevyev,<sup>1,2</sup> V. N. Shalyapin,<sup>3,4</sup> A. P. Zheleznyak<sup>2</sup> and L. J. Goicoechea<sup>4</sup>

<sup>1</sup>Institute of Radio Astronomy NAS of Ukraine, Kharkiv, Ukraine.

<sup>2</sup>Institute of Astronomy of Kharkiv National University, Kharkiv, Ukraine.

<sup>3</sup>Institute of Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine.

<sup>4</sup>Departamento de Fisica Moderna, Universidad de Cantabria, Santander, Spain.

**17:15-17:30 Determination of the time delays in the presence of microlensing**

V.S.Tsvetkova<sup>1,2</sup>, L.A. Berdina<sup>1,2</sup>

<sup>1</sup>Institute of Radio Astronomy NAS of Ukraine, Kharkiv, Ukraine.

<sup>2</sup>Institute of Astronomy of Kharkiv National University, Kharkiv, Ukraine.

**17:30-17:45 Influence of relic gravitational waves on the CMB polarization**

F.Y. Khlystun,<sup>1</sup> S.M. Ponomarenko<sup>2</sup>

<sup>1</sup>Kiev National University of Civil Engineering and Architecture, Kyiv, Ukraine

<sup>2</sup>Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine

**May 25, Thursday 14:00 – 18:00**

**Chair – Parnovsky S.L.**

**14:00-14:15 Cosmic voids as a Rosetta Stone for establishing the nature of dark energy**

B. Novosyadlyj, Yu. Kulinich, M. Tsizh, AO LNU, Lviv, Ukraine

**14:15-14:30 First molecules in the early Universe beyond the  $\Lambda$ CDM model**

O. Sergijenko<sup>1</sup>, F. Karasenko<sup>2</sup>

<sup>1</sup>AO LNU, Lviv, Ukraine, <sup>2</sup>LNU, Department of Astrophysics, Lviv, Ukraine

**14:30-14:45 Radio polarization maps of supernova remnants in a non-uniform medium**

V. Beshley<sup>1</sup>, O. Petruk<sup>1</sup>, R. Bandiera<sup>2</sup>, S. Orlando<sup>3</sup>

<sup>1</sup>IAPMM NASU, Lviv, Ukraine, <sup>2</sup>INAF - Osservatorio Astrofisico di Arcetri, Firenze, Italy

<sup>3</sup>NAF - Osservatorio Astronomico di Palermo “G.S. Vaiana”, Palermo, Italy

**14:45-15:00 Three-dimensional MHD simulations of SNR evolution**

T. Kuzyo, O. Petruk, IAPMM NASU, Lviv, Ukraine

**15:00-15:15 Short soft gamma-ray burst spectral evolution**

V.N. Kondratyev, KNU, Physics Department, Kyiv, Ukraine

**15:15-15:30 The cosmic ray intensity on the solar flare initial stage**

Yu.I. Fedorov, MAO NASU, Kyiv, Ukraine

**15:30-15:45 A theoretical approach to describe the distribution of Galactic cosmic rays in the heliosphere**

Yu.L. Kolesnyk, B.A. Shakhov, MAO NASU, Kyiv, Ukraine

**15:45-16:00 Potential sources of ultra high energy cosmic rays**

B.I. Hnatyk, AO KNU, Kyiv, Ukraine

**16:00-16:30 Coffee break**

**16:30-16:45 Signatures of the ultra-high energy cosmic ray acceleration**

**by the magnetar SGR 1900+14 in the HAWC gamma-ray observatory data.**

R. Gnatyk, AO KNU, Kyiv, Ukraine

**16:45-17:00 Radio emission of Vela Supernova remnant and Vela pulsar wind nebula**

P. Plotko<sup>1</sup>, B. Hnatyk<sup>2</sup>

<sup>1</sup>KNU, Department of Physics, Kyiv, Ukraine, <sup>2</sup>AO KNU, Kyiv, Ukraine

**17:00-17:15 The flare activity of the blazar AO 0235+164**

A. E. Volvach<sup>1</sup>, M. G. Larionov<sup>2</sup>, L. N. Volvach<sup>1</sup>

<sup>1</sup>Radio Astronomy Laboratory of Crimean Astrophysical Observatory, Yalta, Crimea, Ukraine

<sup>2</sup>Space Science Center of P.N. Lebedev Physics Institute, Russian Academy of Science,

**17:15-17:30 AGN feedback in elliptical galaxies**

Iu. V. Babyk<sup>1,2</sup>

<sup>1</sup>MAO NASU, Kyiv, Ukraine.

<sup>2</sup>University of Waterloo, Waterloo, Canada.

**17:30-17:45 Magnetization of quark-gluon plasma after the deconfinement phase transition.**

P. Minaiev, V. Skalozub

Oles Honchar Dnipro National University, Dnipro, Ukraine.

**17:45-18:00 Direct measurements of laser light scattering and aberration from the ARTEMIS geostationary satellite through thin clouds**

V. Kuzkov<sup>1</sup>, Z. Sodnik<sup>2</sup> and S. Kuzkov<sup>1</sup>

<sup>1</sup>MAO NASU, Kyiv, Ukraine

<sup>2</sup>European Space Research and Technology Centre, Noordwijk, the Netherlands