

Invited lecture

SDSS SPECTROSCOPIC SURVEY(S)

Z. Ivezić

*University of Washington
Department of Astronomy, Box 351580, Seattle, WA 98195, USA
e-mail: ivezic@astro.washington.edu*

In addition to optical photometry of unprecedented quality, the Sloan Digital Sky Survey (SDSS) is also producing a massive spectroscopic database. The SDSS spectra have a wavelength coverage from 3800 to 9200 Å, with a resolution of about 2000. The recent Data Release 5 includes spectra for over 150,000 stars and nearly a million extragalactic objects. I will discuss a subset of science results based on the analysis of SDSS spectra, including kinematics and metallicity distribution of the Milky Way stars, determination of the stellar mass of galaxies, and a sample of AGN with unusual line profiles.

Invited lecture

CHEMI-IONIZATION PROCESSES: ALKALI-METAL GEOCOSMICAL PLASMAS

A. N. Klyucharev¹, N. N. Bezuglov¹, A. A. Matveev¹,
A. A. Mihajlov², Lj. M. Ignjatović², M. S. Dimitrijević³

¹*St Petersburg State University / Research Institute of Physics,
1, Ulyanovskaya ul., Peterhoff, St. Petersburg, 198504, Russia*

²*Institute of Physics, P.O. Box 57, 11001 Belgrade, Serbia*

³*Astronomical Observatory, Volgina 7, 11160 Belgrade, Serbia*

Chemi-ionization processes in thermal and sub-thermal collisions of excited alkali atoms with atoms in ground and excited states were considered, with a particular accent to the applications for geocosmical plasma research. An improved version of semi-classical method for the rate coefficients calculation is presented. The method is applied to the cases of excited alkali atoms with the principal quantum numbers $5 \leq n \leq 25$. The results of calculations of the considered chemi-ionization processes rate coefficients are compared to the existing experimental data. Their good mutual agreement recommends them for analysis of geocosmical plasma processes.