Short talk

APPLICATION OF LINE PROFILE FUNCTIONS TO SYNTHETIC SPECTRA OF COOL AND HOT STELLAR OBJECTS

C. M. S. Johnas

Hamburger Sternwarte, University of Hamburg
e-mail: cjohnas@hs.uni-hamburg.de

We present a study of profile functions in various stellar objects ranging from cool dwarfs up to white dwarfs. The alkali resonance absorption lines, especially the line far wings, are dominant in the optical spectrum of cool dwarfs. NaI and KI play an extraordinary role in the formation of the spectra. We present an analysis of differently calculated alkali resonance line profile functions and their application to observations. Furthermore, we present the effect of selected Stark broadened lines for hotter and denser stellar objects. Model atmospheres are necessary in order to calculate synthetic spectra and to derive reliable parameters and surface chemical composition for such objects. For the models and the synthetic spectra we use the general purpose stellar atmosphere code PHOENIX (Hauschildt & Baron 1999).

Short talk

THE SHAPE OF THE Fe Kα SPECTRAL LINE IN THE CASE OF PARTLY OBSCURED ACCRETION DISK

P. Jovanović, L. Č. Popović

Astronomical Observatory, Volgina 7, 11160 Belgrade, Serbia
e-mail: pjovanovic@aob.bg.ac.yu, lpopovic@aob.bg.ac.yu

The X-ray emission from a relativistic accretion disk around central Black Hole (BH) of Active Galactic Nuclei (AGN) could be significantly absorbed by an outflowing wind, especially in case of so-called Low Ionization Broad Absorption Line (LoBAL) quasars. Recent observations of such quasars (e.g. Mrk 231, see Braito et al. 2004; Chartas et al. 2006) confirmed the presence of X-ray absorbers in these objects. In this paper we studied the changes of Fe Kα spectral line shape in the case when a portion of the accretion disk is blocked from our view by the X-ray absorbing/obscuring material, while the rest of the accretion disk is less absorbed/obscured and visible. To analyze the disk emission we used a ray-tracing method considering both metrics: Schwarzschild and Kerr. Obtained results show that absorbing/obscuring material can induce significant changes in the Fe Kα line shape, depending on geometry of the X-ray absorbers.