

Invited lecture

ABSORPTION LINE DIAGNOSTICS OF QUASAR OUTFLOWS

G. Chartas

*Penn State University
525 Davey Lab, University Park, PA 16802
chartas@astro.psu.edu*

Recent XMM-Newton, Suzaku, and Chandra observations of quasars suggest the presence of high velocity outflows of ionized absorbing material with velocities up to $0.4c$. Quasar winds might be more powerful than what we previously thought. X-ray absorption lines produced by outflowing material detected in several quasars is possibly probing a highly ionized and high velocity component of the accretion disk wind that appears to be distinct from the absorbers detected in the optical and UV wavebands. We will present constraints on the properties of the outflowing wind such as velocities, launching radii, column densities, ionization state and variability. Assuming the interpretation that the high-energy absorption features arise from highly ionized Fe we find that the mass outflow rates in these objects are comparable to the estimated accretion rates of a few M_{\odot}/yr and are considerably higher than those based on the wind properties derived from UV BALs.

Invited lecture

ON THE BROADENINGS OF SPECTRAL LINES IN SURFACE WAVES DISCHARGES

M. Christova¹, L. Christov²

¹*Department of Applied Physics, Technical University-Sofia,
BG-1000 Sofia, Bulgaria*

²*Faculty of Chemistry, Sofia University, BG-1164 Sofia, Bulgaria
e-mail: mchristo@tu-sofia.bg, christov@chem.uni-sofia.bg*

The broadenings of argon spectral lines emitted in surface waves discharges are examined in the pressure range 1 Torr – 1 atm. The different mechanisms of broadening are studied. Interpretation of experimental results is discussed. The study is of interest for plasma diagnostics.