

From Spectroscopic Diagnostics of Black Hole Winds to Their Physical Structure

Ehud Behar

Technion Israel Institute of Technology, Haifa, Israel

The photo-ionized winds driven by active galactic nuclei (AGN) are mostly studied through absorption lines in their X-ray spectra readily measured by space observatories such as XMM-Newton and Chandra. Since no imaging resolves these sources, all physical inferences need to be spectroscopic. We will demonstrate the rich absorption features of AGN winds that often include all charge states (e.g., neutral to H-like Fe) and show how the observed spectra can be used to interpret the physical structure of the winds.

The talk will describe in detail a recent model of radiation pressure compression of the photo-ionized gas that provides a natural explanation for the observations and has testable predictions for the gas pressure of the wind.