

TOWARD A UNIFIED AGN STRUCTURE: Demosthenes Kazanas, Keigo Fukumura, Chris Shrader (*NASA/GSFC*), Ehud Behar (*Technion*) & Ioannis Contopoulos (*Academy of Athens*)

We present a unified model for the structure and appearance of accretion powered sources across their entire luminosity range from galactic X-ray binaries (XRB) to luminous quasars, with emphasis on AGN and their phenomenology. Central to this model is the notion of MHD winds launched by the accretion disks that power these objects. These winds provide the matter that manifests as blueshifted absorption features in the UV and X-ray spectra of a large fraction of these sources; furthermore, their density distribution in the poloidal plane determines their “appearance” (i.e. the column and velocity structure of these absorption features and the obscuration of the continuum source) as a function of the observer inclination angle (a feature to which INTEGRAL has made significant contributions). This work focuses on just the broadest characteristics of these objects; nonetheless, it provides scaling laws that allow one to reproduce within this model the properties of objects extending in luminosity from luminous quasars to XRBs. Our general conclusion is that the AGN phenomenology can be accounted for in terms of three parameters: The wind mass flux in units of the Eddington value, \dot{m} , the observers’ inclination angle θ and the logarithmic slope between the O/UV and X-ray fluxes α_{OX} ; however because of a correlation between α_{OX} and UV luminosity the number of significant parameters is two. The AGN correlations implied by this model appear to extend to and consistent with the XRB phenomenology, suggesting the presence of a truly unified underlying structure for accretion powered sources.