

Invited lecture

THE INFLUENCE OF THE SPECTRAL ENERGY DISTRIBUTION ON BROAD-LINE REGION EMISSION IN AGN AND QUASARS

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The broad-line region (BLR) emission of Active Galactic Nuclei and Quasars is powered by photoionization by the powerful continuum of the central engine. While broadly similar from object to object, there is a range of behavior, characterized by e.g., the Baldwin Effect and the Boroson & Green Eigenvector 1. At the same time, the spectral energy distribution (SED) of the continuum is observed to vary from object to object; this behavior is most commonly described in terms of the well-known anti-correlation between the UV luminosity and α_{ox} , the point-to-point spectral index between the UV and X-rays. In this talk I will discuss our work from the past ~ 10 years on the influence of the shape of the spectral energy distribution on broad-line region emission. We have found simply-understood phenomena, e.g., in which a hard SED has been shown to be responsible for strong high-ionization lines. We have also found less direct links between the SED and the BLR emission, including the “cooling-challenged” BLR, as well as evidence for modification of the SED by transmission through a wind. Finally, I will describe the results of recent large-scale modeling efforts to understand in a very general way the link between the broad-line region emission and the spectral energy distribution.