
SMBH accretion physics with bluer optical interferometry

Matthew Temple*¹

¹Durham University – United Kingdom

Abstract

VLTI/Gravity+ has successfully resolved broad Hydrogen lines in luminous AGN by using K-band interferometry. In this talk I will argue that expanding future faint-object interferometric capabilities to bluer wavelengths will be hugely beneficial for our understanding of black hole accretion physics. The peak of SMBH growth happened at so-called ‘cosmic noon’, $z \sim 2$, where optical spectrographs probe the rest-frame ultraviolet portion of the spectrum. Surveys such as SDSS have identified hundreds of thousands of AGN at this epoch, allowing us to build a rich picture of the diversity seen in rest-frame ultraviolet quasar spectra. These spectra show a range of properties with high-ionization lines such as CIV showing evidence for winds being driven off the accretion disk in some (but not all) quasars. I will present photoionisation models with Cloudy which suggest that these line-emitting regions are located at a range of radii within the broad-line region, and explain how future interferometry would be useful to constrain SMBH accretion and the nuclear outflows they can drive.

*Speaker