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## Modeling time-dependence of continuum and polarized optical-UV emission in AGN

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The structure and geometry of the innermost regions of AGN are still unknown. Several methods have been used to infer the size of the regions surrounding the accretion disk, otherwise unresolvable with current instruments. Polarization is one of them and it is probably one of the best tools to probe the unresolved AGN parts. In the pioneering work of Gaskell and Goosmann (2012), the authors successfully achieved a polarization reverberation mapping study of the Seyfert-1 nucleus NGC 45151. Using cross-correlation analyses, it was possible to constrain the reprocessing mechanism and radial geometry of this source, putting a clear limit on the inner radius of the broad line region. In our current work, we use the radiative transfer code STOKES to simulate the spectroscopic, polarimetric and timing behavior of any AGN, including the enigmatic narrow lines Seyfert-1s. We explore different equatorial and polar scattering regions in order to test a large model space phase. The goal of our research is to use the technique of reverberation between the total and polarized continuum emission to constrain the geometry of the innermost scattering regions in a large sample of AGN.

### Motivation

### Grant

no

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