

# Determining the Inclinations of AGN using Narrow-Line Region Kinematics

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## Abstract

We will determine the inclinations of the AGN in 36 Seyfert galaxies with STIS G430M and/or G430L long-slit spectra, by measuring radial velocities as a function of position in their narrow-line regions (NLRs) and generating kinematic models to match the observed radial velocities. Our previous studies of three Seyfert galaxies with STIS show that the kinematics of their NLRs are dominated by radial outflow, and that simple biconical outflow models can be used to derive the inclination of the bicone axis, and hence the obscuring torus, with respect to our line of sight. The inclinations will be compared with those from other techniques (water masers, broad Fe K-alpha profiles) to test for discrepancies and identify possible misalignments between the accretion disk, torus, and/or host galaxy. More importantly, our results will provide the foundation for future studies that investigate the dependence of observed properties (e.g., SEDs, absorbing columns, broad-line widths) on inclination, which is vital for understanding the physics of AGN.

**Investigators:**

	Investigator	Institution	Country
PI	Prof. D. Michael Crenshaw	Georgia State University Research Foundation	USA/GA
CoI	Prof. Steven Kraemer	Catholic University of America	USA/DC
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Number of investigators: 3

**Dataset Summary:**

Instrument	No. of Datasets	Retrieval Method	Retrieval Plan
STIS	92	FTP	The STIS spectra will be retrieved directly from MAST through the web site.
WFPC2	89	FTP	The images will be retrieved directly from MAST through the web site. The number of datasets includes mostly WFPC2, but also WFPC, FOC, and ACS images.