

# NAOC SPECIAL TALK

**Time: 2:30PM, Friday May 29, Location: A601 NAOC**

## Numerical simulations of Accretion Disks

**Prof. James Stone**

**Department of Astrophysical Sciences**

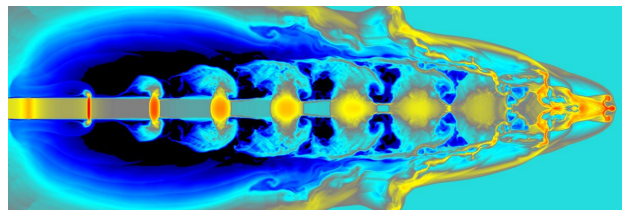
**Princeton University**



James Stone is Professor of Astrophysical Sciences and Applied and Computational Mathematics at Princeton University. He is also the Director of the Princeton Institute for Computational Science and Engineering. He has spent most of his career developing and applying numerical methods to study astrophysical gas dynamics, for example for his PhD thesis in 1990 from the University of Illinois, he developed the ZEUS code. He spent 10 years on the faculty at the University of Maryland, and was Professor of Mathematical Physics at Cambridge University in England, before moving to Princeton in 2003.

### Abstract

In most astrophysical disks, angular momentum transport and accretion is thought to be mediated by MHD turbulence driven by the magnetorotational instability (MRI). Moreover, the inner regions of accretion disks around compact objects (such as black holes) are dominated by radiation pressure. Thus, studying accretion disks in these systems requires numerical methods for MHD and radiation transport. I will describe numerical methods developed over the past 10 years to investigate astrophysical accretion disks, and I will summarize some of the most important recent results from such studies.



*All are welcome!*