

**BLACK HOLES IN DENSE STAR CLUSTERS**  
**Aspen Center for Physics**  
**2015 Aspen Winter Conference January 17-22, 2015**

TITLE: Simulations of Optically Thick Accretion onto Black Holes - The Power of Radiative Jets

SPEAKER: Olek Sadowski (MIT)

In this talk I will describe challenges of simulating thin and super-critical accretion disks and present the numerical methods that allow for global simulations in general relativity. I will then present in detail solutions for disks accreting above the Eddington rate and show that the radiative jets they produce can be very powerful even without any extraction of the black hole rotational energy. In the end, I will show preliminary simulations of disks with sub-Eddington accretion rates.