

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

TITLE: Stellar Tidal Disruptions and Supernova Explosions around SMBHs

SPEAKER: Elena Rossi (Leiden University, Netherlands)

In this talk, I will undertake the unwise task of presenting two different (but related) topics. I will first show our "just-submitted" results on circularisation of stellar debris around non-rotating supermassive black holes (SMBHs) and show preliminary results for rotating ones. I will then talk about the fate of supernova remnants, exploding in the sphere of influence of SMBHs. While the density gradients effectively decelerate remnants, SMBH tidal forces can shear them, and the net result is a shorter lifetime in X-ray, that have observational consequences. This latter paper has just been accepted for publication. Both projects are led by PhD students.