



ΓΕΝΙΚΟ ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑΤΟΣ ΦΥΣΙΚΗΣ

# *PHYSICS COLLOQUIUM*

Thursday, 27 March 2008  
17:00-18:00

3<sup>rd</sup> Floor Seminar Room

*"All Black Holes Great and Small"*

S. Markoff,  
Astronomical Institute "Anton Pannekoek",  
University of Amsterdam, Amsterdam, The Netherlands

## Abstract

The physicist J. Wheeler is famous for saying "Black holes have no hair", which means that black holes have no "personal" identifying characteristics. Once you know a black hole's mass, spin and charge, it is indistinguishable physically from another black hole with the same quantities. But what about the physics occurring around black holes, such as during accretion, when gravitationally captured matter spirals in towards the event horizon? One might naively predict that a small black hole (formed by stellar collapse) and a very big black hole (lurking in the center of a galaxy) would exhibit behaviour that scales predictably as a function of the mass difference. If true, this would provide a new handle on some currently outstanding problems we face in accretion theory. After some general background, I will summarize the current evidence for such a scaling of black hole physics. I will also end with a discussion of some examples where we are currently applying such scalings to further our understanding near-event-horizon physics.