

Abstract Submitted  
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**Testing the No-Hair Theorem with Observations of Black Holes  
in the Electromagnetic Spectrum** TIM JOHANNSEN, University of Arizona

— According to the no-hair theorem, black holes are uniquely characterized by their masses and spins. In this talk, I will discuss a new framework for testing the no-hair hypothesis. The approach is formulated in terms of a Kerr-like spacetime containing a quadrupole moment that is independent of both mass and spin. If the no-hair theorem is correct, then any deviation from the Kerr metric quadrupole has to be zero. I will show how VLBI imaging observations of Sgr A\*, timing observations of quasi-periodic variability in galactic black hole binaries with upcoming missions, such as LOFT, as well as spectroscopic observations of fluorescent iron lines may lead to an astrophysical test of the no-hair theorem.

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