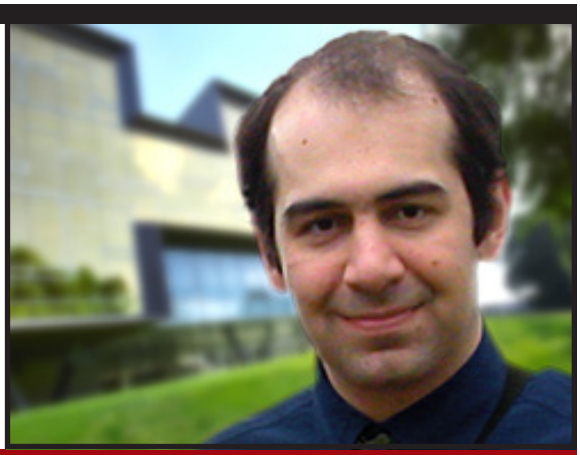
3:30 pm • Friday March 1, 2013 • 2241 Chamberlin Hall • Coffee at 4:30 pm


# Niayesh Afshordi

Perimeter Institute for Theoretical Physics & the University of Waterloo

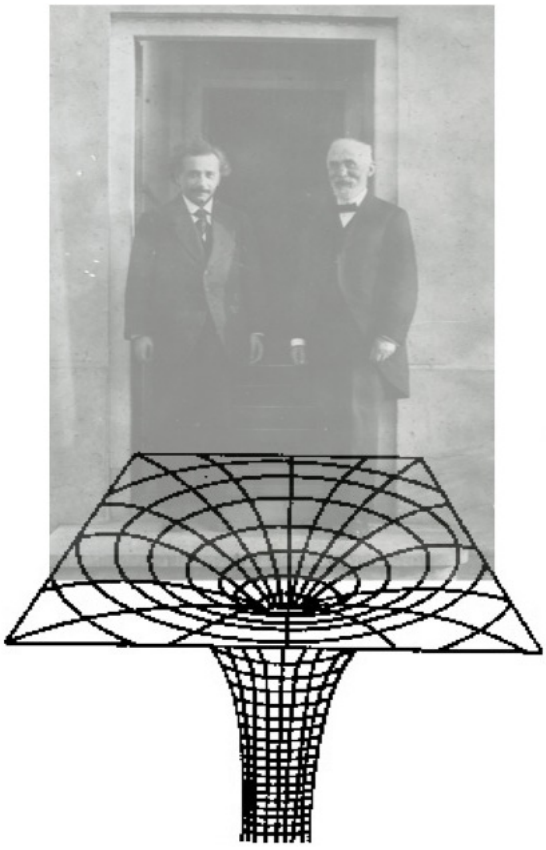
# Life After Lorentz

## Quantum Mechanics, Gravity, and the Crisis of Falsifiability

Department of Physics Colloquium

WISCONSIN

In the last decade of 19th century, Hendrik Lorentz discovered a group of transformations of space and "local time" that left Maxwell equations of electromagnetism unchanged. In the ensuing decades, this revelation led to the development of special and general theories of relativity by Einstein, and has been the cornerstone of much of theoretical physics and astrophysics ever since. In spite of its tremendous success over the past century, in this talk I entertain the possibility that Lorentz invariance might have been a "glorious historical accident", rather than a fundamental symmetry of nature! (My favorite) motivations for this line of argument come from a need for falsifiable theories of quantum gravity, early universe, dark energy, and black hole physics.



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