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Faculty

DANIEL FREEDMAN

Professor of Physics
Professor of Applied Mathematics

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Related Links:

MIT Department of Mathematics

MIT Center for Theoretical Physics

Area of Physics:

String Theory

Research Interests

Professor Freedman's research is in quantum field theory, quantum gravity, and string theory with an emphasis on the role of supersymmetry. His most recent area of concentration is the AdS/CFT correspondence in which results on the strong coupling limit of certain 4-dimensional gauge theories can be obtained from calculations in classical 5-dimensional supergravity.

Biographical Sketch

Daniel Freedman received the B.A. from Wesleyan University in 1960, the M.S. and Ph.D. in physics from the University of Wisconsin in 1962 and 64. Raymond Sawyer was his thesis advisor. Freedman held postdoctoral appointments at Imperial College, U.C. Berkeley and Princeton before joining the faculty at the Institute of Theoretical Physics at SUNY Stony Brook. In 1980 he joined the MIT faculty in applied mathematics, and has been jointly appointed with the MIT theoretical physics faculty since 2001. Professor Freedman's research is in quantum field theory, quantum gravity, and string theory, with an emphasis on the role of supersymmetry. During the last two years the focus has shifted to the computation and properties of on-shelf amplitudes in supersymmetric theories. A former Sloan and twice Guggenheim fellow, Professor Freedman received the Dirac Medal and Prize in 1993, and gave the 2002 Andrejewski Lectures in Mathematical Physics. In 2006 Professor Freedman received the Dannie Heineman Prize (with Sergio Ferrara & Peter Van Nieuwenhuizen) "for constructing supergravity, the first supersymmetric extension of Einstein's theory of general relativity, ..." Professor Freedman was also recognized as a distinguished alumni fellow by the Physics

Department at the University of Wisconsin-Madison in 2006. He is a Fellow of the American Academy of Arts & Sciences and of the American Physical Society.

Selected Publications

Professor Freedman's publications are available on the SPIRES HEP Literature Database.

Last updated on March 25, 2014 2:28 PM