世纪物理情·系列讲座

Grey Galaxies and Dual Dressed Black Holes in $N=4$ Yang Mills theory

【报告人】
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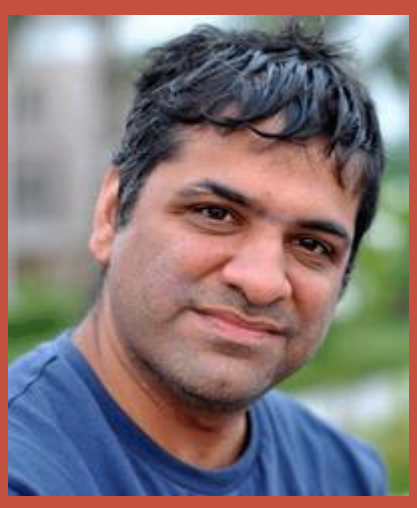
清华大学高等研究院
科学馆104报告厅

【摘要】

From the holographically dual viewpoint, the phase diagram of N=4 Yang Mills theory Yang Mills theory--at given values of the energy, angular momentum and charges--is dominated by black holes in $AdS_5 \times S^5$. In this talk we explain that the nature of these black holes changes as a function of energy. While familiar Kerr-Reisner-Nordstrom AdS black holes dominate at high energies, they turn out to be unstable in a band of energies above extremality. We construct new black hole solutions that yield new phases that are the end point of this instability. These new phases dominate at low energies, and in particular (we conjecture) in the BPS limit. We use our construction to provide a new conjecture for the supersymmetric cohomology of N=4 Yang Mills at large N, and discuss the interplay of our conjecture with field theory results for the superconformal index.

【报告人简介】



Professor Shiraz Minwalla currently holds the rank of Distinguished Professor at the Department of Theoretical Physics at TIFR(Tata Institute of Fundamental Research) Mumbai, India. His work has touched on several aspects of quantum field theory, general relativity and string theory, and has been recognized by several honours including the New Horizon's prize, the TWAS award, the Infosys prize, the Shanti Swarup Bhatnagar award, the inaugural Nishina Asia Award and the ICTP prize.

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