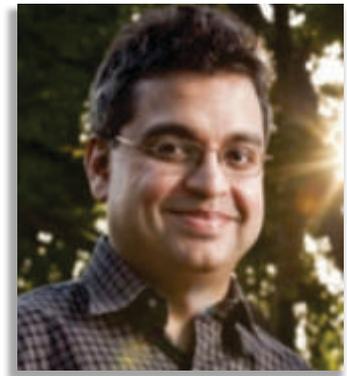


## ANINDA SINHA

Assistant Professor  
Centre for High Energy Physics  
Indian Institute of Science  
Bangalore-560012, Karnataka  
asinha@cts.iisc.ernet.in



Aninda Sinha obtained his B.Sc. from Jadavpur University, Calcutta in 1999 followed by M.A. and CASM from DAMTP, Cambridge, in 2001. He obtained his Ph.D. from University of Cambridge in 2005. He was a postdoctoral fellow at Gonville and Caius College and a PPARC fellow at DAMTP (both held concurrently) from 2004-2007. After 3 years of postdoctoral work at the Perimeter Institute for Theoretical Physics in Canada, he joined IISc as an assistant professor and Ramanujan fellow in December 2010.

### RESEARCH DESCRIPTION

I am a theoretical physicist using the tools of string theory to understand the workings of nature. There is now ample evidence through certain ill-understood physical facts, like the existence of a small cosmological constant or the dark-matter problem, that we are missing some crucial fundamental ingredients in our theoretical understanding. This is quite likely arising due to the way that gravity works at microscopic scales. At the same time, a plausible theory that has been put forward to try to understand gravity at microscopic scales is string theory.

I have worked on fundamental aspects of string theory as well as using it as a tool to probe phenomenological questions. One intriguing concept that has emerged as a very useful tool is that of holography or the equivalence between a theory of gravity and a certain gauge theory living on the boundary of space-time. Ideas related to holography, specifically those concretely realized in string theory through the AdS/CFT correspondence, have been in the forefront of research for a decade now. Using this framework, insights into seemingly intractable problems, typically involving strongly coupled gauge theories, have been obtained. Much of my recent research work has focussed on using this framework to gain insights into strongly coupled physics.

I am going to continue exploring various aspects of applications of AdS/CFT correspondence to strongly coupled physics. Since other techniques to probe this very interesting regime are rare, it is of utmost interest not only in the string theory community but also in the particle physics and condensed matter community to see what string theory methods have to say.

### SELECTED PUBLICATIONS

New Massive Gravity and AdS<sub>4</sub> counterterms. By Dileep P. Jatkar, Aninda Sinha. arXiv:1101.4746 [hep-th]. Phys.Rev.Lett. 106 (2011) 171601.  
Holographic c-theorems in arbitrary dimensions. By Robert C. Myers, Aninda Sinha. arXiv:1011.5819 [hep-th]. JHEP 1101 (2011) 125.  
Seeing a c-theorem with holography. By Robert C. Myers, Aninda Sinha. arXiv:1006.1263 [hep-th]. Phys.Rev. D82 (2010) 046006.  
On the new massive gravity and AdS/CFT. By Aninda Sinha. arXiv:1003.0683 [hep-th]. JHEP 1006 (2010) 061.  
The Viscosity bound in string theory. By Aninda Sinha, Robert C. Myers. arXiv:0907.4798 [hep-th]. Nucl.Phys. A830 (2009) 295C-298C.