

Contribution Title: ON FUNCTIONAL DETERMINANTS IN ADS/CFT: A HOLOGRAPHIC FORMULA
Authors: R. M. Aros, D. E. Diaz
Presenting author: Diaz D. E.
Affiliation: Universidad Andres Bello, Chile
E-mail: ddiaz@physik.hu-berlin.de
Invited speaker:
YRS seminar: NO

A ‘holographic formula’ expressing the functional determinant of the scattering operator in an asymptotically locally anti-de Sitter (ALAdS) space has been proposed in terms of a relative functional determinant of the scalar Laplacian in the bulk. It stems from considerations in AdS/CFT correspondence of a quantum correction to the partition function in the bulk and the corresponding subleading correction at large N on the boundary. As a first application, we extract the type-A conformal anomaly of GJMS operators (conformal powers of the Laplacian). Secondly, we probe the prediction for a class of quotients of hyperbolic space by a discrete subgroup of isometries, which include thermal AdS and BTZ instantons. In all these cases, the functional determinants can be expressed in terms of an associated Selberg’s zeta function. In the Lorentzian version, we elucidate the connection with quasi-normal modes.