

Meeting: 1005, Newark, Delaware, SS 2A, Special Session on Singular Analysis and Spectral Theory of Partial Differential Equations

1005-58-183 **Klaus Kirsten*** (klaus_kirsten@baylor.edu), Department of Mathematics, One Bear Place #97328, Waco, TX 76798-7328. *Functional determinants of Laplace like operators.*

We present techniques for the analysis of functional determinants for a certain class of Laplace like operators. Examples considered in detail are the Laplacian on the generalized cone and when spherically symmetric potentials are present. On the bounded generalized cone the functional determinant is expressed through quantities on its base. For balls and monopoles of any dimension these results can be used to find closed answers in terms of the Barnes or the Riemann zeta function. In the presence of a spherically symmetric potential the determinant is expressed through the Jost function for the corresponding scattering problem. Answers that allow for a numerically convenient evaluation are found. (Received February 08, 2005)