

1099-58-84

Guglielmo Fucci* (fuccig@ecu.edu), Department of Mathematics, East Carolina University,
331 Austin Building, East Fifth Street, Greenville, NC 27858-4353. *Spectral Functions for Regular
Sturm-Liouville Problems.*

Spectral functions represent an invaluable mathematical tool used in several areas of both mathematics and physics. For this reason, developing accurate methods for their detailed analysis is of fundamental importance. In this talk we present a powerful technique for the study of the analytic continuation of the spectral zeta function associated with one-dimensional regular Sturm-Liouville problems endowed with self-adjoint separated and coupled boundary conditions. The analytically continued expression for the spectral zeta function is then utilized for the evaluation of the functional determinant of the Sturm-Liouville operator and the computation of the coefficients of the asymptotic expansion of the trace of the associated heat kernel. (Received January 28, 2014)