Zeta and Fredholm determinants of self-adjoint operators

by Luiz Hartmann
Universidade Federal de São Carlos

Abstract: Given an invertible self-adjoint operator $L$ in a Hilbert space, under a certain assumption on $L$, I will describe the relation between the (regularized) Fredholm determinant, $\text{det}_p(I + z \cdot L^{-1})$, and the zeta regularized determinant, $\text{det}_\zeta(L + z)$. Moreover, I will discuss the asymptotic expansion of the Fredholm determinant in relation to the heat trace coefficients, showing that the constant term is the zeta-determinant of $L$. 