

On spectral zeta functions for a non-local boundary value problem of the Laplacian

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Abstract: By using the Feynmann-Kac formula and spherical rearrangement, Luttinger proved that a ball is the maximizer of the partition function of the Dirichlet Laplacian among all domains of the given measure for all positive values of time [1]. From the Luttinger's result it follows that the real valued spectral zeta function of the Dirichlet Laplacian is also maximized in a ball among all domains of the given measure.

In this talk using methods of probability theory [2], we generalize above results for a non-local Laplacian [3]. We mainly concern ourself with bounded domains in three-dimensional Euclidian space for the real spectral zeta function of a non-local boundary value problem of the Laplacian.

Keywords: spectral zeta functions, Laplacian, non-local boundary value problems.

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