



Abstract Gluing Formula for Casimir Energies *

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Let M_1 and M_2 be two Riemannian manifolds each of which has the boundary N. Consider the Laplacian on M_1 and M_2 augmented with Dirichlet boundary conditions on N. A natural question to ask is whether there is any relation between spectral properties of the Laplacian on M_1 , M_2 , and the Laplacian on the manifold M (without boundary) obtained by gluing together M_1 and M_2 , namely $M = M_1 \cup_N M_2$. A partial answer is given by the Burghelea-Friedlander-Kappeler-gluing formula for zeta-determinants. This formula contains an (in general) unknown polynomial which is completely determined by some data on a collar neighborhood of the hypersurface N. In this talk, I present results for the polynomial in terms of suitable geometric tensors on N. Choosing M_1 , M_2 and M as appropriate, results in a gluing formula for Casimir energies.

Conflicts of Interest: The authors declare no conflict of interest.



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