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South Korea. *The polynomial associated with the BFK-gluing formula of the zeta-determinant.*

Let  $M_1$  and  $M_2$  be two Riemannian manifolds each of which have 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 if there is any relation between spectral properties of the Laplacian on  $M_1$ ,  $M_2$ , and the Laplacian on the manifold (without boundary)  $M = M_1 \cup_N M_2$ . A partial answer is given by the Burghelca-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  $N$ . (Received June 01, 2017)