Traces, Casimir energy and the Feynman propagators
Alexander Strohmaier

The Birman-Krein formula allows to compute traces of operators in terms of the scattering matrix. I will explain a Birman-Krein formula for manifolds Euclidean near infinity for co-closed differential forms. This Birman-Krein formula seems to be new even in the three dimensional case for one forms and obstacle scattering where it reduces to a formula for Maxwell's equations. I will then state a relative trace formulae and the relation of these quantities to the Casimir effect. In the third part of the talk I will explain the role of the Feynman propagator in this context. This part will also prepare some material for the subsequent talk by Baer on the local index formula. Based on joint work with Alden Waters and Christian Bär.