IRENE MARIA SABADINI, Politecnico di Milano

Spinor Dirac operator on manifolds with boundary conditions and S-resolvent estimates

In this talk, we present recent results on the spectral theory based on the S-spectrum applied to the Dirac operator D on manifolds subject to homogeneous Dirichlet and Robin-type boundary conditions. Applying this spectral theory requires considering D^2, which is expressed as the sum of a second-order Laplacian and a curvature operator, in accordance with the Schrödinger–Bochner–Weitzenböck theorem. This makes the analysis substantially different from existing approaches in the literature. Despite this, we are still able to obtain bisectorial-type estimates for the S-resolvent.