

A General Heat Equation Proof of the Index Formula

First it shall be exhibited how the various forms of the index formula result from Poincaré duality in KK-theory. The image of an arbitrary PDO on M is a special Dirac operator on T^*M . The index formula can then be obtained by very explicit calculations as were used by Berline, Getzler and Vergne.

The result is a heat equation proof of the general index formula which does not use the fact that K-homology is generated by the Dirac operators.