Scattering matrices, perturbation determinants, and trace formulas in the works of Hagen Neidhardt

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The aim of my talk is to overview a part of our joint work with Hagen devoted to perturbation determinants and trace formulas for a pair of operators with the trace class resolvent difference. This work was initiated more than twenty five years ago.

The talk will be devoted to perturbation determinants and trace formulas for a pair of operators with the trace class resolvent difference. A formula for the scattering matrix of a pair of selfadjoint operators will be discussed too. Both topics are treated in the framework of boundary triplet approach to the extension theory of symmetric operators. More precisely, the scattering matrix and perturbation determinants are expressed by means of the Weyl function and boundary operators. Applications to boundary value problems for ordinary differential operators and elliptic operators in bounded or exterior domains will also be discussed.


References


