MICHAL JEX, Karlsruher Institut für Technologie
Trace Hardy Inequality for Euclidian Space with Cut

We obtain trace Hardy inequalities for the Euclidean space with a bounded or an unbounded cut. In this novel geometric setting the respective trace Hardy inequality non-typically holds also in the two-dimensional case. The obtained results are applied to the heat equation on the Euclidean space with an insulating cut. They imply an estimate on the large time decay for the weighted L^2-norm of the temperature jump across the interface of the insulator.