

Local support theorem for the exponential Radon transform

By TIBOR ÓDOR (Szeged) and ENIKŐ DINNYÉS (Budapest)

Abstract. We prove a local support theorem for the exponential Radon transform for functions of exponential decay at infinity. We also show that our decay condition is essentially sharp for the classical Radon transform for hyperbolic-type domains as holes, by showing stretched exponential counterexamples. This shows a difference from the support theorems for compact domains, where the decay has to be just faster than any polynomial. Also, it gives a refinement for non-compact domains, where support theorems were proved only for functions with compact support. Our method is a version of [10] and [3].

TIBOR ÓDOR
DEPARTMENT OF GEOMETRY
BOLYAI INSTITUTE
UNIVERSITY OF SZEGED
ARADI VÉRTANÚK TERE 1
H-6720 SZEGED
HUNGARY
AND
RÉNYI INSTITUTE OF MATHEMATICS
P.O.B. 127
H-1364 BUDAPEST
HUNGARY

ENIKŐ DINNYÉS
DEPARTMENT OF PROBABILITY
AND STATISTICS
EÖTVÖS LORÁND UNIVERSITY
PÁZMÁNY PÉTER SÉTÁNY 1/A
H-1117 BUDAPEST
HUNGARY
AND
RÉNYI INSTITUTE OF MATHEMATICS
P.O.B. 127
H-1364 BUDAPEST
HUNGARY

Mathematics Subject Classification: 44A12, 44-02.

Key words and phrases: Radon transform.