LIMITING CASE HARDY INEQUALITIES ON THE SPHERE

AHMED A. ABDELHAKIM

Abstract. We give sharp limiting case Hardy inequalities on the sphere $S^2$ and show that their optimal constants are unattainable by any $f \in H^1(S^2) \setminus \{0\}$. The singularity of the problem is related to the geodesic distance from a point on the sphere.


Keywords and phrases: Critical Hardy inequality, sharp constant, 2-sphere, Sobolev spaces on manifolds.

REFERENCES