



Characterizations of L^p Bounded Spectral Multipliers on the Sphere and Related Manifolds

For $1 < p < 2 \left(\frac{d-1}{d+1}\right)$, we completely characterize all compactly supported functions $m : (0, \infty) \rightarrow \mathbb{C}$ for which the spectral multipliers $\{m(R\sqrt{\Delta}) : R > 0\}$ are uniformly bounded on $L^p(S^d)$, proving new transference principles as a consequence.

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