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UNIQUENESS OF ROTATION INVARIANT NORMS

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ABSTRACT. If $N \geq 2$, then there exist finitely many rotations of the sphere \mathbb{S}^N such that the set of the corresponding rotation operators on $L^p(\mathbb{S}^N)$ determines the norm topology for $1 < p \leq \infty$. For $N = 1$ the situation is different: the norm topology of $L^2(\mathbb{S}^1)$ cannot be determined by the set of operators corresponding to the rotations by elements of any ‘thin’ set of rotations of \mathbb{S}^1 .

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