

1155-42-310

David Beltran* (dbeltran@math.wisc.edu), **Shaoming Guo**, **Jonathan Hickman** and **Andreas Seeger**. *The circular maximal operator on Heisenberg radial functions.*

A variant of the Stein spherical maximal function defined on the Heisenberg group \mathbb{H}^n was introduced by Nevo and Thangavelu in 1997. Whilst the sharp Lebesgue space estimates for this object are known for $n \geq 2$ (independently obtained by Müller and Seeger and Narayanan and Thangavelu), the case of \mathbb{H}^1 remains open and it is currently unknown if the circular maximal function is bounded in $L^p(\mathbb{H}^1)$ for any finite p .

In this talk, we present sharp L^p estimates for this object when restricted to a class of Heisenberg radial functions. Under this assumption, the problem reduces to studying a variable-coefficient version of Bourgain's circular maximal operator on the Euclidean plane which presents a number of interesting singularities: it is associated to a non-smooth curve distribution and, furthermore, fails both the usual rotational curvature and cinematic curvature conditions.

This is joint work with Shaoming Guo, Jonathan Hickman and Andreas Seeger. (Received January 17, 2020)