Steiner formula in the Heisenberg group

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Abstract

Let \( \Omega \subset \mathbb{R}^n \) be a bounded regular domain, and let \( \Omega_\epsilon \) be the \( \epsilon \)-neighborhood of \( \Omega \) with respect to the Euclidean metric. The classical formulation of the Steiner’s formula expresses the volume of \( \Omega_\epsilon \) as a finite polynomial in \( \epsilon \). One of the interesting features of this result is that the coefficients of this polynomial, the so called quermassintegrals, encode curvature properties of the boundary \( \partial \Omega \).

In this talk we will present the Heisenberg counterpart of this result, where we consider the \( \epsilon \)-neighborhood taken with respect to the \( cc \)-metric.

This is a joint work with Zoltán Balogh, Fausto Ferrari, Bruno Franchi and Kevin Wildrick.