Steiner formula in the Heisenberg group

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Abstract

Let $\Omega \subset \mathbb{R}^n$ be a bounded regular domain, and let Ω_ϵ be the ϵ-neighborhood of Ω with respect to the Euclidean metric. The classical formulation of the Steiner's formula expresses the volume of Ω_ϵ as a finite polynomial in ϵ. 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 ϵ-neighborhood taken with respect to the *cc*-metric.

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