

Kinga Sipos

Universität Bern (UNIBE)

Geometric inequalities on the Heisenberg group

I am studying geometric inequalities in the setting of Heisenberg group with the method of optimal mass transportation. The Brunn-Minkowski, Prékopa-Leindler and Borel-Brascamp-Lieb inequalities constitute the main interest of our study. Juillet finds some arguments, relying on the measure contraction property on the Heisenberg group, which disprove the existence of certain types of Brunn-Minkowski inequality and so also of Borel-Brascamp-Lieb inequality (this first being a consequence of the second). We concluded that the approach used in the Euclidean case (see C. Villani) and in the Riemannian case (see D. Cordero-Erausquin, R. J. McCann, M. Schmuckenschläger) to prove these inequalities cannot be directly applied to the Heisenberg case.