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Convex embeddability on countable linear orders and knot theory

Joint work with Alberto Marcone, Luca Motto Ros and Vadim Weinstein

We consider countable linear orders and study the quasi-order of convex embeddability and the equivalence relation it naturally induces; we obtain both combinatorial and descriptive set-theoretic results. We further extend our research to the case of circular orders. These results are then applied to the study of arcs and knots, establishing lower bounds (in terms of Borel reducibility) for the complexity of some natural relations between these geometrical objects.