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An introduction to the coarse hyperspace: An insight on its geometric and algebraic properties, Part 2

In this talk, we continue the study of the coarse hyperspace. Our investigation follows two different directions. The first direction is more geometric. Since Yu proved that a bounded geometry metric space satisfies the coarse Baum-Connes conjecture if it can be coarsely embedded in a Hilbert space, a lot of effort has been put to provide properties that ensure the existence of such an embedding. We discuss whether some of these properties are preserved or not by taking the coarse hyperspace. Secondly, we consider the hyperspace of a group endowed with a canonical coarse structure that, if the group is finitely generated, agrees with the metric structure of finitely generated groups. Then we focus on discussing the properties of the coarse hyperspaces of those coarse groups, introducing the coarse subspace whose support is given by the family of all subgroups. In particular, we show how algebraic properties of groups can be encoded and characterised by their coarse geometry.