

FINITE POINT CONFIGURATIONS, RIGIDITY AND GROUP ACTIONS

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We are going to consider finite point configurations inside sets of a given Hausdorff dimension. Some distances among the pairs of points are specified and others are not. Congruence is defined in terms of side-length. When configurations are suitably rigid, this definition of congruence essentially coincides with the classical one. We are going to prove that there exists a non-trivial dimensional threshold such that sets of larger Hausdorff dimension determine a positive proportion of all possible finite point configurations of a given type. The proof is a combination of analytic, combinatorial and geometric considerations. The results can be found in <https://arxiv.org/pdf/1708.05919.pdf>.