

Joint equidistribution problems through homogeneous dynamics

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Using results in homogeneous dynamics about joinings of measures I will explain how natural arithmetic questions can be answered. Examples include points on spheres of length \sqrt{D} with their orthogonal lattices, two-dimensional rational planes in \mathbb{R}^4 with four naturally associated Heegner points, and also surjectivity of the reduction map from CM-elliptic curves to tuples of isomorphism classes of supersingular elliptic curves over finitely many inert primes. No previous background about homogeneous dynamics will be assumed.