

Algebraic Tori in the Complement of Quartic Surfaces

Fernando Figueroa

Northwestern University, USA

Log Calabi-Yau pairs can be thought of as generalizations of Calabi-Yau varieties. Previously Ducat showed that all coregularity 0 log Calabi-Yau pairs $(\mathbb{P}^3, S)$ are crepant birational to a toric model. A stronger property to ask for is for the complement of S to contain a dense algebraic torus. In that case, we say the pair $(\mathbb{P}^3, S)$ is of Cluster type. In this talk we will show a full classification of coregularity zero, slc, reducible quartic surface for which their complements contain a dense algebraic torus. Along the way we will talk about relative cluster type pairs. We will finish by showing some partial results in the case of irreducible quartic surfaces. This is based on Joint work with Eduardo Alves da Silva and Joaquín Moraga

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