

- Iliena Colarte Gomez,

Title: On GT-varieties

Abstract: In this talk we tackle the problem of finding a minimal binomial generating set of a class of lattice ideals related to Togliatti systems in \mathbb{P}^3 . For any integer $d \geq 4$ and any d -th root e of 1 we denote by X_d the toric variety defined as the image of the morphism $\varphi_{T_d} : \mathbb{P}^3 \longrightarrow \mathbb{P}^{\mu(T_d)-1}$ where T_d are all monomials of degree d in $k[x, y, z, t]$ invariant under the action of the diagonal matrix $M(1, e, e^2, e^3)$. We show that T_d is a monomial Galois-Togliatti system, it is in fact a generalization of a previous result from Mezzetti and Miró-Roig. Our main goal is to describe a \mathbb{Z} -basis of the lattice L_η associated to $I(X_d)$ as well as a minimal binomial set of generators of the lattice ideal $I(X_d) = I_+(\eta)$.