



ODTU-Bilkent Algebraic Geometry

Monotonicity of the Hilbert Functions of some monomial curves

By

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Abstract: Let SS be a 4-generated pseudo-symmetric semigroup generated by the positive integers $\{n_1, n_2, n_3, n_4\}$ where $\gcd(n_1, n_2, n_3, n_4) = 1$. k being a field, let $k[S]$ be the corresponding semigroup ring and I_S be the defining ideal of SS . f_n being the homogeneous summand of f , tangent cone of SS is $k[S]/I_S$ where $I_S = \langle f_n \mid n \in S \rangle$. We will show that the "Hilbert function of the local ring (which is isomorphic to the tangent cone) for a 4 generated pseudo-symmetric numerical semigroup $\langle n_1, n_2, n_3, n_4 \rangle$ is always non-decreasing when $n_1 < n_2 < n_3 < n_4$ " by an explicit Hilbert function computation.

Date: 1 December 2023, Friday

Time: 15:40 (GMT+3)

Place: Zoom

To request the event link, please send a message to sertoz@bilkent.edu.tr