ODTU-Bilkent Algebraic Geometry

Real plane sextic curves with smooth real part

By

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Abstract: We have obtained the complete deformation classification of singular real plane sextic curves with smooth real part, i.e., those without real singular points. This was made possible due to the fact that, under the assumption, contrary to the general case, the equivariant equisingular deformation type is determined by the so-called real homological type in its most naïve sense, i.e., the homological information about the polarization, singularities, and real structure; one does not need to compute the fundamental polyhedron of the group generated by reflections and identify the classes of ovals therein. Should time permit, I will outline our proof of this theorem.

As usual, this classification leads us to a number of observations, some of which we have already managed to generalize. Thus, we have an Arnol'd-Gudkov-Rokhlin type congruence for close to maximal surfaces (and, hence, even degree curves) with certain singularities. Another observation (which has not been quite understood yet and may turn out K3-specific) is that the contraction of any empty oval of a type I real scheme results in a bijection of the sets of deformation classes. (joined work with Ilia Itenberg)

Date: 25 October 2024, Friday
Time: 15:40 (GMT+3)
Place: Zoom

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