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On K3 surfaces with non-elementary hyperbolic automorphism group

Wednesday, 29 October 2025 12:15 (1 hour)

My talk is based on my joint work with Professor Koji Fujiwara (Kyoto University) and Professor Xun Yu (Tianjing University).

Main result of my talk is the finiteness of the Néron-Severi lattices of complex projective K3 surfaces whose automorphism groups are non-elementary hyperbolic under the assumption that the Picard number greater than or equal to 6 which is optimal to ensure the finiteness. In this talk, after recalling the notion of hyperbolicity of group due to Gromov and its importance in mathematics, I would like to explain why the non-elementary hyperbolicity of K3 surface automorphism group is the problem of the Néron-Severi lattices and how one can deduce the above-mentioned finiteness, via the study of genus one fibrations on K3 surfaces and recent work of Kikuta and Takatsu on geometrically finiteness.

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