



ODTU-Bilkent Algebraic Geometry

“From Calculus to Hodge”

By

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Abstract: This is an expository talk mainly for the young Complex Geometry students. I will start with the tangent line to a real parabola, pass to the complex case and then to the projective case. After giving informal descriptions of the de Rham and Dolbeault cohomologies, which are related by the Hodge decomposition theorem, I will describe the Hodge Conjecture with integer coefficients which is known to be false in general despite the strong evidence in its favor given by the Lefschetz (1,1)-theorem. It is known that some torsion integral Hodge classes may exist which are not algebraic. The existence of non-torsion integral Hodge classes contradicting the Hodge conjecture were constructed recently (30 years ago!) by Kollar. I want to end the talk discussing this example and its possible variants.

Date: 11 December 2020, Friday

Time: 15:40

Place: Zoom

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