

LECTURE SERIES

Mathematical Science Literature

May 4, 2020

1:00pm - *Virtually*

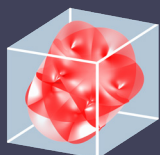
"Rationality questions in algebraic geometry"



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Abstract: Over the course of the history of algebraic geometry, rationality questions -- motivated by both geometric and arithmetic problems -- have often driven the subject forward. The rationality or irrationality of cubic hypersurfaces in particular have led to the development of abelian integrals (dimension one), birational geometry (dimension two) and Hodge theory (dimension 3). But there remained much we didn't understand about the condition of rationality, such as how it behaves in families. However, there has been recent progress: work of Hassett, Tschinkel, Pirutka and others, working with examples in dimension 4, showed that it is in general neither an open condition nor a closed one, but does behave well with respect to specialization.

In this talk I'll try to give an overview of the history of rationality and the current state of our knowledge.



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