



Mathematics Colloquium

Period mappings and Diophantine equations

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Abstract

Given a family of complex algebraic varieties parameterized by a base variety B there is an associated period mapping, which (at least locally) goes from B to a certain flag variety. However, although both the source and target are algebraic varieties, this period map is of a transcendental nature.

I will give some friendly examples introducing the period mapping. After that I will explain joint work with Brian Lawrence which shows how the transcendence of the period mapping can be applied to problems in Diophantine equations. For example we give another proof of the Mordell conjecture (originally proved by Faltings): there are only finitely many rational points on an algebraic curve over \mathbb{Q} whose genus is at least 2.

Wednesday, 21 February 2018, 4pm

Smith Hall 204

Tea and refreshments will be served at 3:45pm.