

Geometry, Physics, and Representation Theory  
Northeastern University

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**Hypergeometric Equations and Lyapunov Exponents**

**Abstract**

Most integrals of algebraic differential forms cannot be computed explicitly, however when they depend on a parameter the integrals satisfy explicit differential equations and this naturally leads to variations of Hodge structures. Hypergeometric equations are some of the simplest non-trivial examples and I will use them as an example to explain some relations between Hodge theory and invariants coming from dynamical systems called Lyapunov exponents. The necessary background will be provided.