



Berlin  
Mathematical  
School

## BMS Friday Colloquium

Friday 23 May 2014 at 14:00

*Tea & Cookies at 15:00*

Erwin Schrödinger-Zentrum Adlershof, Room 0'311

Humboldt-Universität zu Berlin, Rudower Chaussee 26, 12489 Berlin

## Alina Marian (*Northeastern U*)

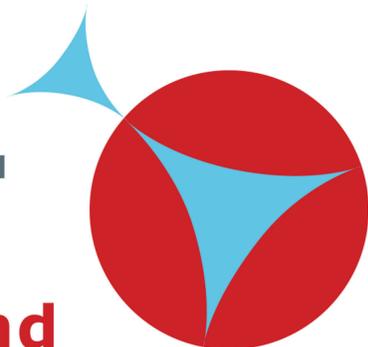
### Volumes of Moduli Spaces

In classical algebraic geometry, answers to enumerative questions are phrased as integrals on suitable moduli spaces of geometric objects such as curves, maps or vector bundles. From a different perspective, in mathematical physics, partition functions of Lagrangians appearing in gauge theories or string theories give rise to integrals on algebraic or symplectic moduli spaces. The structure of these integration invariants often reveals further interesting properties of the underlying moduli spaces.

Marian's talk will revolve around the question of calculating basic integrals on a few important moduli spaces. Her main example will be the moduli space of holomorphic vector bundles on a Riemann surface, where striking formulas were written down by Witten. These formulas admit deformations which are still to be interpreted geometrically.

Alina Marian is a mathematician whose research focuses on moduli theory in algebraic geometry, representation theory, complex geometry and mathematical physics. After receiving her PhD from Harvard University in 2004, she was a Gibbs Assistant Professor at Yale University, a postdoctoral fellow at Stanford University, and a member of the Institute for Advanced Study at Princeton. She began her position as associate professor at Northeastern University, in Boston, USA in 2011. Marian is giving the BMS Friday talk as part of the MAF Intensive Course "A Meeting for Young Women in Mathematics".

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**Moduli and  
Automorphic Forms**