

Twisting Mumford's Formula

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The Brill–Noether classes are certain cycles on the Jacobian of the universal curve over $M_{g,n}$ parametrizing loci of line bundles with excess sections. Given a section of the Jacobian, we can pull back the Brill–Noether classes to cycles on $M_{g,n}$. An extension of these classes has been proposed by Pagani–Ricoli–van Zelm. In this talk, I will explain how to get a certain refinement of these classes, and how to calculate this refinement and consequently the PRvZ classes. The key ingredient in the calculation is a twisted version of Mumford's formula. As an application, we obtain novel formulas for the double ramification cycle, and consequently (not known if novel) relations in the tautological ring. This is joint work in progress with A. Abreu and N. Pagani.

Orateur: MOLCHO, Samouil