

1067-14-1206

Steffen S Marcus* (ssmarcus@math.brown.edu), Department of Mathematics, Brown University, Box 1917, Providence, RI 02912, and **Renzo Cavalieri**. *Polynomial Families of Tautological Classes on $\mathcal{M}_{g,n}^{rt}$* .

In this talk I will report on joint work with Renzo Cavalieri. Natural tautological classes $P_g(\alpha; \beta)$ on $\mathcal{M}_{g,n}^{rt}$ are studied. They arise by pushing forward the virtual fundamental classes of spaces of relative stable maps to an unparameterized \mathbb{P}^1 with prescribed ramification over 0 and ∞ given by partitions $\alpha \vdash d$ and $\beta \vdash d$ respectively. A theorem of Vakil shows the $P_g(\alpha; \beta)$ to be polynomial in the parts of the partitions. This polynomial is computed explicitly in low genus and low total length $l(\alpha) + l(\beta)$. I will discuss these computations and our approach to a general algorithm for computing these classes. (Received September 20, 2010)