Polynomial Families of Tautological Classes on the Moduli Space of Curves

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The tautological ring is a heavily studied subring of the Chow ring of the moduli space of curves. Simply stated, it is just large enough to contain all the known Chow classes admitting some geometric construction. In this talk, I will describe natural families of tautological classes which arise by pushing forward the virtual fundamental classes of spaces of relative stable maps to an unparameterized projective line. 'Relative' in this case means our maps have prescribed ramification over zero and infinity given by partitions of the degree. Using an argument of Ravi Vakil, we show the families are polynomial in the parts of the partitions. I will discuss our approach to computing these polynomials explicitly using localization techniques. This is joint work with Renzo Cavalieri.

Tuesday Mar 8th
3:00 p.m.
Harvard (SC 507)