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Abstracts of Short Communications and Posters

Section:

11. Mathematical Physics

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Cohomological Field Theories and Tautological Classes
Abstract: The moduli space of stable curves is a compactification of the space of isomorphism classes of Riemann surfaces with marked points. A cohomological field theory is a representation, in the appropriate sense, of the homology of the moduli space of stable curves, the most dramatic example of which is the cohomology ring of certain smooth, projective varieties with a deformed cup product arising from the Gromov-Witten invariants of the variety. Tautological cohomological classes on the moduli space of curves naturally gives rise to families of cohomological field theories, allowing one to classify rank one, genus one, cohomological field theories in coordinates which are additive under tensor product. We will explain this and generalizations to twisted Gromov-Witten invariants.