

Refined curve counting on surfaces

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Abstract:

This is report on joint works with Vivek Shende, Florian Block and Sam Payne. An old conjecture of mine gives a generating function for the numbers of δ -nodal curves in linear systems on surfaces. In this talk we want to propose a refinement of the conjecture, where the numbers of curves are replaced by polynomials in a variable y , which for $y=1$ specialize to the numbers of curves. For toric surfaces these refined invariants are related to real enumerative geometry (Welschinger invariants) and have an interpretation in tropical geometry.