

Enumeration of curves on K3 surfaces by polyhedral degenerations

Let (S, L) be a primitively polarized K3 surface, k an integer. Integral curves of geometric genus g in the linear system $|kL|$ form a family of dimension g (if non-empty).

One wants to count the number of such curves passing through g general points fixed on S .

Gromov-Witten theory provides a complete answer to this question when $k = 1$, but poses serious problems when $k > 1$. I shall present an approach based upon degenerating the surface S immersed by the system $|kL|$ in a union of planes incarnating a triangulation of the S^2 sphere.

This is a joint project with *Ciro Ciliberto*.

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