
ZIV RAN, UC Riverside

Differential Equations in Hilbert-Mumford Calculus

Hilbert-Mumford Calculus refers to the intersection theory of the tautological classes (Chern classes of tautological bundles) on the relative Hilbert scheme of a family of nodal curves. This Calculus is largely encoded in the powers of the discriminant polarization, and consequently can be encoded in a suitable generating function. We show this generating function satisfies a certain second-order differential equation of evolution type, which can be used to compute it.