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The Witten complex for algebraic curves with cone-like singularities

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The Witten deformation is an analytical method proposed by Witten which, given a function

on a smooth compact Riemannian manifold, leads to a proof of the Morse inequalities. In this talk we generalise the Witten deformation to singular complex algebraic curves with cone-like singularities, and functions on which we call admissible Morse functions.

They are particular examples of stratified Morse functions in the sense of the theory developed by Goresky/MacPherson.

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