

The $P = W$ conjecture: statement, motivation,
known cases.

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Abstract

This is a survey talk explaining the statement of the so called $P = W$ conjecture (due to M. A. de Cataldo, T. Hausel and myself), its motivation, stemming from the determination, due to T. Hausel and F. Rodriguez-Villegas, of the Mixed Hodge polynomial of some character varieties, the few cases in which this conjecture was proved and the problems one finds to extend these proofs to the general case.