

Euler characteristics and q -difference equations

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Abstract. This paper is concerned with linear q -difference equations. Our main result is an explicit formula for the Euler characteristic of the sheaf of analytic solutions attached to any linear algebraic q -difference equation. This formula involves certain invariants attached to the so-called intermediate singularities. As an application, we interpret the index of rigidity recently introduced by Sakai and Yamaguchi in cohomological terms.

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