

**Grivaux, Julien**

**On a conjecture of Kashiwara relating Chern and Euler classes of  $\mathcal{O}$ -modules.** (English)

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Characteristic classes in Hochschild homology are well known in homological algebra and have been recently studied in various algebraico-geometric contexts. Recall that M. Kashiwara had constructed, for every object  $\mathcal{F}$  of the bounded derived category of analytic sheaves on a complex manifold  $X$  with coherent cohomology, the Hochschild and co-Hochschild classes of  $\mathcal{F}$  which are mapped via Hochschild-Kostant-Rosenberg isomorphisms to the so-called Chern and Euler classes of  $\mathcal{F}$ . The aim of this paper is to give a simple proof of Kashiwara's conjecture that states that the Euler class of a coherent analytic sheaf  $\mathcal{F}$  on a complex manifold  $X$  is the product of the Chern character of  $\mathcal{F}$  with the Todd class of  $X$ . As a corollary a simpler and functorial proof of the Grothendieck-Riemann-Roch theorem in Hodge cohomology for complex manifolds is obtained.

The high interest of the proofs presented in this paper is complemented with a clear and objective writing.

Reviewer: [Ana Rita Martins \(Lisbon\)](#)

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coherent analytic sheaf; Euler class; Chern character; Todd class

**Full Text:** [Euclid arXiv](#)