Huyghe, Christine

Fourier transform of $\mathcal{D}^{\dagger}_{\mathcal{X},\mathbb{Q}}(\infty)$-modules. (Transformation de Fourier des $\mathcal{D}^{\dagger}_{\mathcal{X},\mathbb{Q}}(\infty)$-modules.) (French) Zbl 0872.14011

C. R. Acad. Sci., Paris, Sér. I 321, No. 6, 759-762 (1995).

Let $\mathcal{V}$ be a complete discrete valuation ring of unequal characteristics $(0, p)$, K its fraction field and $\mathcal{X}$ the formal projective space over $\mathcal{V}$. In this note, the author studies the geometric Fourier transform $\mathcal{F}(\mathcal{M})$ of a bounded coherent complex $\mathcal{M}$ of $\mathcal{D}^{\dagger}_{\mathcal{X},\mathbf{Q}}(\infty)$-modules. She shows that $\mathcal{F}(\mathcal{M})$ coincides with the naive Fourier transform coming from the automorphism F of the weak completion $A_N(K)^{\dagger}$ of the Weyl algebra given by $F(\partial_{x_i}) = \pi x_i, F(x_i) = -\partial_{x_i}/\pi$, where $\pi^{p-1} = -p$.

See also the reviewer's remark in the preceding review [*C. Huyghe*, C. R. Acad. Sci., Paris, Sér. I 321, No. 5, 587-590 (1995)].

Reviewer: L.Narváez-Macarro (Sevilla)

MSC:

14F10 Differentials and other special sheaves; D-modules; Bernstein-Sato ideals and polynomials

Cited in **4** Documents

Keywords:

discrete valuation ring; Fourier transform; $\mathcal{D}$-module