Meeting: 1003, Atlanta, Georgia, SS 14A, AMS Special Session on D-Modules, I

1003-14-795 **Josep Àlvarez Montaner** and **Anton Leykin*** (leykin@math.uic.edu), 322 SEO, 851 S.Morgan st, Chicago, IL 60607. *On computing the characteristic cycles of localizations.*

For a polynomial ring $R = k[x_1, ..., x_n]$, we present an algorithm for computing the characteristic cycle of the localization $R_f = R[f^{-1}]$ for any polynomial $f \in R$. Working in the (commutative) polynomial ring in $2n$ variables, our method avoids the direct computation of R_f, which involves the (noncommutative) Weyl algebra.

In certain cases, the knowledge of characteristic cycles of the localizations leads to information about the characteristic cycles of the local cohomology modules $H^i_I(R)$, therefore, answering questions about vanishing/non-vanishing of these modules. (Received September 29, 2004)