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Abstract

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J.L.BRYLINSKI - Transformations canoniques, Dualité projective, Théorie de Lefschetz, Transformations de Fourier et sommes trigonométriques.

We present a topological version of quantized contact transformations, which allows a brand new viewpoint on Lefschetz theory and some progress towards "microlocalizing" topological objects (the first step in this direction is the notion of "characteristic variety" for a constructible sheaf. In a similar spirit, we give a few applications of the theory of homogeneous Fourier transform (à la Malgrange) and of Deligne's twin theory, in positive characteristic.

T.MONTEIRO FERNANDES - Problème de Cauchy pour les systèmes micro-différentiels.

M.Kashiwara and P.Schapira have introduced the notion of micro-characteristic direction for a microdifferential system, which is the good one to solve Cauchy problem in the sheaf of functions with essential singularities along an hypersurface modulo holomorphic functions.

Our first aim is to give the notion of 1-microcharacteristic direction which corresponds to the above one plus a Levi condition. We can then solve Cauchy problem in the sheaf of meromorphic functions with poles in an hypersurface modulo holomorphic functions. Actually we prove a more general theorem for a couple $(\mathcal{M}, \mathcal{N})$ of systems, version of a theorem by Kashiwara and Schapira where we do not need to use the sheaf of infinite order operators.

Finally we obtain as a natural consequence of the preceding statements a propagation theorem for the solutions sheaves of a system \mathcal{M} with values in a system \mathcal{N} at the boundary of an open set of T^*X . Our theorem is analogous to the corresponding one by Kashiwara and Schapira where they consider $\overset{\infty}{\mathcal{N}}$ instead of \mathcal{N} .

T. MONTEIRO FERNANDES - Propagation et constructibilité pour les systèmes microdifférentiels formels.

Let X be a complex analytic manifold, V a Lagrangian submanifold of the cotangent bundle of X , \mathcal{M} and \mathcal{N} two microdifferential systems. We suppose \mathcal{N} to have simple characteristics on V . We then study a variety $\hat{C}_V(\mathcal{M})$ which is the characteristic variety of a differential system $\overline{\mathcal{M}}_0$ on V associated to \mathcal{M} by Kashiwara-Oshima and Kashiwara-Kawai. We give a condition in terms of $\hat{C}_V(\mathcal{M})$ so that there is propagation for the cohomology sheaves of the complex of solutions of \mathcal{M} in $\hat{\mathcal{N}}$, the system generated by \mathcal{N} over the ring of formal operators. We also prove that if $\hat{C}_V(\mathcal{M})$ is Lagrangian then these sheaves are \mathbb{C} -constructible.

These results are to be compared with those obtained by Kashiwara-Schapira in the framework of infinite order operators and by Kashiwara-Oshima, Kashiwara-Kawai for systems with regular singularities.