

INDAM MEETING:  
**HYPERBOLIC DYNAMICAL SYSTEMS  
IN THE SCIENCES**

CORINALDO (ITALY)  
MAY 31 - JUNE 4, 2010

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**Contact Anosov flows and FBI transform**

In this talk, I would like to speak about the relation between the study of transfer operators for geodesic flows on negatively curved manifolds and semi-classical analysis. In studying transfer operators for hyperbolic flows, the main difficulty (and interest) lies in the analysis of their action on functions having high frequency in the flow direction. This leads us to the situation where functions with high frequency are push-forwarded by the geodesic flow and reminds us of the main theme of semi-classical analysis. So naturally we expect that some ideas from semi-classical analysis may be useful in the study of transfer operators for “classical” geodesic flows. Here we try to use a modification of the FBI (Fourier-Bros-Iaglonitzer) transform, which is a kind of wave-packet decomposition, to study transfer operators for geodesic flows on negatively curved manifolds. As a result, we show quasi-compactness of those transfer operators. This result is actually the same as I announced a few years ago. But now the proof is much more transparent.