ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

5. Differential Geometry and Global Analysis

1991 MS Classification: 53, 22
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On Hermitian-Liouville structures on compact Hermitian surfaces

A Hermitian-Liouville structure on a Hermitian surface is defined as a 2-dimensional real vector space L of first integrals of its geodesic flows such that (1) L contains the energy function; (2) every first integral in L is a fiberwise homogenous polynomial of dgree 2 and is hermitian. In the case of compact Kaehler surfaces, the structure leads the complete integrability of its geodesic flows under a certain condition (see Reference). In the case of compact non-Kaehler surfaces, some properties hold under some conditions. The structure can be constructed on the Hopf surface. Reference: M. Igarashi, On compact Kähler-Liouville surfaces, Journal of the Mathematical Society of Japan Vol.49 No.2 (1997), 363-397.