ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

4. Algebraic Geometry

1991 MS Classification: 14H60, 34A20
Weikard, Rudi, Department of Mathematics University of Alabama at Birmingham Birmingham, USA

Algebro-geometric Differential Operators

Recently F. Gesztesy and myself have shown that a necessary and sufficient condition for an elliptic function q to be an algebro-geometric potential of $L = D^2 + q$ is that the differential equation $Ly = zy$ admits only meromorphic solutions whatever the value of $z \in \mathbf{C}$ is (Acta Math. 176 (1996), 73-107).

In the meantime corresponding results have been obtained in the case when q is a rational or a simply periodic (but meromorphic) function. Generalizations to the case of differential expressions of arbitrary order as well as to the case of matrix-valued differential expressions have also been made.