ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

20. Special Activities of the ICM 1998

Emmy Noether Lecture

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Variations on Conservation Laws for the Wave Equation

The time dependent wave equation has many conservation laws obtainable by using Emmy Noether's theorem for equations coming from Lagrangians. From this nucleus we survey some estimates that can be found for equations close and not so close to the wave equation and show what these estimates are good for (time decay for exterior problems and nonlinear Klein-Gordon, for the reduced wave equation and for the Tricomi equation).

On a slightly different note, some weakly quasi and other nonlinear perturbations of the time wave equation have simple formal asymptotic solutions. These formal solutions probably represent real solutions but that requires some new estimates.