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Towards a theory of differential constraints of a hydrodynamic hierarchy. (English)

Zbl 1055.35092

J. Nonlinear Math. Phys. 10, No. 2, 229-242 (2003).

The authors present a theory of compatible differential constraints of a hydrodynamic hierarchy of infinite dimensional systems. One of the main aims of the work is to show that the notion of differential constraint is useful in the theory of integrable systems. The authors consider differential constraints which are compatible with the whole hierarchy. Some new integrable models are presented.

Reviewer: [Mariano Rodriguez Ricard \(La Habana\)](#)

MSC:

[35Q35](#) PDEs in connection with fluid mechanics

[37K10](#) Completely integrable infinite-dimensional Hamiltonian and Lagrangian systems, integration methods, integrability tests, integrable hierarchies (KdV, KP, Toda, etc.)

Cited in **1** Review
Cited in **16** Documents

Keywords:

[hierarchies](#); [infinite dimensional systems](#); [integrable systems](#); [differential constraints](#)

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