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Weak self-adjoint differential equations. (English) [Zbl 1223.35203](#)
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Summary: The concepts of self-adjoint and quasi self-adjoint equations were introduced by *N. H. Ibragimov* [J. Math. Anal. Appl. 318, No. 2, 742–757 (2006; [Zbl 1102.34002](#))]. In [*N. H. Ibragimov*, *ibid.* 333, 329–346 (2007; [Zbl 1117.83127](#))], a general theorem on conservation laws was proved. In this paper, we generalize the concept of self-adjoint and quasi self-adjoint equations by introducing the definition of weak self-adjoint equations. We find a class of weak self-adjoint quasilinear parabolic equations. The property of a differential equation to be weak self-adjoint is important for constructing conservation laws associated with symmetries of the differential equation.

MSC:

[35K59](#) Quasilinear parabolic equations
[35B06](#) Symmetries, invariants, etc. in context of PDEs

Cited in **7** Reviews
Cited in **52** Documents

Keywords:

quasi self-adjoint equations; conservation laws

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