

Olver, P. J.

Symmetry groups and path-independent integrals. (English) Zbl 0591.73024

Fundamentals of deformation and fracture, Eshelby Mem. Symp., Sheffield/Engl. 1984, 57-71 (1985).

[For the entire collection see [Zbl 0559.00014](#).]

(Author's summary.) Noether's general theorem gives a one-to-one correspondence between nontrivial conservation laws or path independent integrals for the Euler-Lagrange equations of some variational problem and the generalized variational symmetries of the variational problem itself, provided that it satisfies certain nondegeneracy assumptions. Here we give a brief introduction to the theory of generalized symmetries and their connections with conservation laws. Applications are given to the classification of conservation laws for the equations of two dimensional elasticity, especially the linear isotropic and anisotropic cases.

Reviewer: C.O.Horgan

MSC:

74S30 Other numerical methods in solid mechanics (MSC2010)

35J50 Variational methods for elliptic systems

Cited in **47** Documents

Keywords:

[symmetry groups](#); [path independent integrals](#); [Euler-Lagrange equations](#); [theory of generalized symmetries](#); [conservation laws](#); [equations of two dimensional elasticity](#); [linear isotropic](#); [anisotropic cases](#)