

# Point symmetry group of the Lagrangian

*M. Aguirre, J. Krause*

## **Abstract**

The theory of finite point symmetry transformations is revisited within the frame of the general theory of transformations of Lagrangian mechanics. The point symmetry group  $G(L)$  of a given Lagrangian function  $L$  (i.e., the Noether group) is thus obtained, and its main features are briefly discussed. The explicit calculation of the Noether group is presented for two rather simple c-equivalent Lagrangian systems. The formalism affords an introduction to the Noether theory of infinitesimal point symmetry transformations in Lagrangian mechanics; however, it is also of interest in its own right.

## **Keywords**

Field Theory, Elementary Particle, Quantum Field Theory, General Theory, Symmetry Group