# Generalization of the Equivalence Transformations

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This report is devoted to generalization of the equivalence transformations. Let a system of differential equations be given. Almost all systems of differential equations have arbitrary elements: arbitrary functions or arbitrary constants.

The notion of an arbitrary element is related to the fact that a lot of particular problems of mathematical physics contain experimentally determined parameters or functions. And these parameters and functions play the role of arbitrary elements. For example, in gas dynamic equations such an arbitrary element is the state equation. The problem of finding these transformations is one of the stages in group classification.

The nondegenerate change of dependent and independent variables, which transfers any systems of differential equations of a given class to systems of equations of the same class is called the transformation of equivalence of the given class of equations. We shall follow the infinitesimal approach to calculation of the transformations of equivalence which was used for the first time by L.V. Ovsyannikov.