# Hamilton-Jacobi equation

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The aim of this talk is to emphasize several meanings and interpretations of the classical Hamilton-Jacobi equation. It turns out that in a proper geometric setting the (same looking) Hamilton-Jacobi equation represents a coordinate expression for different phenomena. This fact becomes essential particularly when the Hamilton-Jacobi equation is (to be) generalized to non-classical systems, e.g. higher-order Lagrangians, degenerate Lagrangians, field theory, non-variational equations, etc.