

An Introduction to the Variational Bicomplex

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The variational bicomplex is a natural double complex of differential forms defined on the jet space of a fiber bundle. It is a remarkably effective concept for describing a wide range of mathematical constructions in differential geometry, the calculus of variations, the geometry of differential equations and mathematical physics. Moreover, it is extremely useful for computations.

In this very elementary tutorial style talk I shall discuss a few key applications of the variational bicomplex and give an overview of the basic operations in the calculus of jet spaces in a computational setting.