# Lagrangian multiforms, the Darboux-KP system and Chern-Simons theory in infinite-dimensional space

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14 September 2023

**Abstract**

Lagrangian multiform theory is a variational approach to integrability that captures the key property of multidimensional consistency. I will give a brief introduction to this theory, and apply it in particular to the case of the Darboux-KP system, which is the KP hierarchy written in terms of Miwa variables. It is shown how the corresponding Lagrangian multiform structure arises from a Chern-Simons theory in infinite-dimensional space.