

Geometry of jet spaces and integrable systems

Joseph Krasil'shchik, Alexander Verbovetsky

(Submitted on 30 Jan 2010 (v1), last revised 11 Feb 2010 (this version, v2))

An overview of some recent results on geometry of partial differential equations in application to integrable systems is given. Lagrangian and Hamiltonian formalism both in the free case (on the space of infinite jets) and with constraints (on a PDE) are discussed. Analogs of tangent and cotangent bundles to a differential equation are introduced and the variational Schouten bracket is defined. General theoretical constructions are illustrated by a series of examples.

Comments: 63 pages; v2: minor corrections

Subjects: **Differential Geometry (math.DG)**; Mathematical Physics (math-ph); Analysis of PDEs (math.AP); Exactly Solvable and Integrable Systems (nlin.SI)

Cite as: **arXiv:1002.0077v2 [math.DG]**

Submission history

From: Alexander Verbovetsky [[view email](#)]

[v1] Sat, 30 Jan 2010 17:43:49 GMT (60kb)

[v2] Thu, 11 Feb 2010 13:23:57 GMT (61kb)

[Which authors of this paper are endorsers?](#)

Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

math.DG

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1002](#)

Change to browse by:

[math](#)

[math-ph](#)

[math.AP](#)

[nlin](#)

[nlin.SI](#)

References & Citations

- [CiteBase](#)

Bookmark (what is this?)

[CiteULike logo](#)

[Connotea logo](#)

[BibSonomy logo](#)

[Mendeley logo](#)

[Facebook logo](#)

[del.icio.us logo](#)

[Digg logo](#)

[Reddit logo](#)