

# Hodograph solutions of the dispersionless coupled KdV hierarchies, critical points and the Euler-Poisson-Darboux equation

B. Konopelchenko, L. Martinez Alonso, E. Medina

(Submitted on 15 Mar 2010)

It is shown that the hodograph solutions of the dispersionless coupled KdV (dcKdV) hierarchies describe critical and degenerate critical points of a scalar function which obeys the Euler-Poisson-Darboux equation. Singular sectors of each dcKdV hierarchy are found to be described by solutions of higher genus dcKdV hierarchies. Concrete solutions exhibiting shock type singularities are presented.

Comments: 19 pages

Subjects: **Exactly Solvable and Integrable Systems (nlin.SI)**

Cite as: **arXiv:1003.2892v1 [nlin.SI]**

## Submission history

From: Luis Martinez [[view email](#)]

[v1] Mon, 15 Mar 2010 11:10:48 GMT (13kb)

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

## Download:

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

Current browse context:

nlin.SI

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

[new](#) | [recent](#) | [1003](#)

Change to browse by:

[nlin](#)

## 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](#)