

A new class of integrable (3+1)-dimensional dispersionless systems related to contact geometry

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Abstract:

We introduce a new class of (3+1)-dimensional dispersionless integrable systems having Lax pairs written in terms of contact vector fields. Our results show inter alia that (3+1)-dimensional integrable systems are considerably less exceptional than it was believed.

In particular, we present a new (3+1)-dimensional dispersionless integrable system with an arbitrarily large finite number of components. In the simplest special case this system yields a (3+1)-dimensional integrable generalization of the dispersionless Kadomtsev-Petviashvili equation.

For further details please see [arXiv:1401.2122](https://arxiv.org/abs/1401.2122).