

Recent results on integrable multidimensional PDEs connected with commuting vector fields.

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We review the inverse scattering transform for pencils of multidimensional vector fields, recently developed in [1], and we use it to solve the Cauchy problem for integrable nonlinear PDEs in multidimensions connected with their commutation [1, 2, 3], like the heavenly and the dispersionless Kadomtsev-Petviashvili equations.

References

- [1] Manakov, S.V. and Santini, P.M. *Physics Letters A* , **359**(613-619), 2006.
- [2] Manakov, S.V. and Santini, P.M. *JETP Letters*, **83**(462-466), 2006.
- [3] Manakov, S.V. and Santini, P.M. <http://arXiv:nlin.SI/0611047>.