

**Cipolatti, Rolci**

**On the existence of standing waves for a Davey-Stewartson system.** (English) Zbl 0762.35109  
*Commun. Partial Differ. Equations* 17, No. 5-6, 967-988 (1992).

Summary: We consider the standing waves for the Davey-Stewartson system

$$iu_t + \Delta u = a|u|^\alpha u + b_1 uv_{x_1}, \quad -\Delta v = b_2(|u|^2)_{x_1}$$

in  $\mathbb{R}^2$  and  $\mathbb{R}^3$ . By reducing this system to a single nonlinear equation of Schrödinger type, we study the existence, the regularity and asymptotics of ground states.

**MSC:**

[35Q55](#) NLS equations (nonlinear Schrödinger equations)  
[35Q35](#) PDEs in connection with fluid mechanics  
[35B65](#) Smoothness and regularity of solutions to PDEs  
[35B10](#) Periodic solutions to PDEs

Cited in **1** Review  
Cited in **38** Documents

**Keywords:**

[variation method](#); [regularity](#); [asymptotics of ground states](#)

**Full Text:** [DOI](#)

**References:**

- [1] Berestycki H., *Arch. Rach Mech. Anal* 82 pp 313– (1983)
- [2] Bergh J., *Interpolation Spaces* (1976)
- [3] Cazenave T., *Research Notes in Math.* 89 (1983)
- [4] Cazenave T., *An introduction to nonlinear Schrödinger equations* 22 (1989)
- [5] DOI: [10.1098/rspa.1974.0076](#) · [Zbl 0282.76008](#) · [doi:10.1098/rspa.1974.0076](#)
- [6] Folland G. B., *Lectures on partial differential equations* (1983) · [Zbl 0529.35005](#)
- [7] Ghidaglia J. –M., I 308, in: *C.R. Acad. Sci. Paris* pp 115– (1989)
- [8] DOI: [10.1088/0951-7715/3/2/010](#) · [Zbl 0727.35111](#) · [doi:10.1088/0951-7715/3/2/010](#)
- [9] Ghidaglia J.M., Weinstein M.I. *Standing waves for a Davey-Stewartson System*, unpublished.
- [10] Lions P. –L., *Ann. Inst. H. Poincaré Analyse non linéaire* 1 pp 109– (1984)
- [11] Lions P. –L., *Ann. Inst. H. Poincaré Analyse non linéaire* 1 pp 223– (1984)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.