



Collisions between spinning and nonspinning co-axial three-dimensional Ginzburg-Landau solitons

Submitted by Emmanuel Lemoine on Wed, 10/29/2014 - 11:47

Titre	Collisions between spinning and nonspinning co-axial three-dimensional Ginzburg-Landau solitons
Type de publication	Article de revue
Auteur	Mihalache, Dumitru [1], Mazilu, D. [2], Lederer, F. [3], Leblond, Hervé [4], Malomed, Boris A [5]
Editeur	EDP Sciences
Type	Article scientifique dans une revue à comité de lecture
Année	2009
Langue	Anglais
Date	2009/06/01
Numéro	1
Pagination	245 - 254
Volume	173
Titre de la revue	The European Physical Journal Special Topics
ISSN	1951-6401
Mots-clés	Atoms, Molecules, Clusters and Plasmas [6], Condensed Matter [7], Electromagnetism, Optics and Lasers [8], Materials Science, general [9], Measurement Science, Instrumentation [10], Mechanics, Fluids, Thermodynamics [11]
Résumé en anglais	We report results of the first analysis of collisions between stable fundamental (alias spinless) and vortical (spinning) three-dimensional dissipative solitons in a model of a laser cavity. The systematic analysis is carried out for values $S=1$ and $S=2$ of the vorticity of the latter soliton. With the increase of the collision momentum, X , the same generic scenarios are observed in either case: merger into a single fundamental soliton at both small and relatively large values of X , and the formation of two fundamental solitons in an intermediate interval of variation of the collision momentum X . At very large values of X , the collision seems quasi-elastic, but the vortex soliton eventually splits into two nonspinning fragments.
URL de la notice	http://okina.univ-angers.fr/publications/ua5200 [12]
DOI	10.1140/epjst/e2009-01077-7 [13]
Lien vers le document	http://dx.doi.org/10.1140/epjst/e2009-01077-7 [13]

Liens

[1] [http://okina.univ-angers.fr/publications?f\[author\]=8696](http://okina.univ-angers.fr/publications?f[author]=8696)

[2] [http://okina.univ-angers.fr/publications?f\[author\]=8707](http://okina.univ-angers.fr/publications?f[author]=8707)

[3] [http://okina.univ-angers.fr/publications?f\[author\]=8708](http://okina.univ-angers.fr/publications?f[author]=8708)

- [4] <http://okina.univ-angers.fr/herve.leblond/publications>
- [5] [http://okina.univ-angers.fr/publications?f\[author\]=23791](http://okina.univ-angers.fr/publications?f[author]=23791)
- [6] [http://okina.univ-angers.fr/publications?f\[keyword\]=9617](http://okina.univ-angers.fr/publications?f[keyword]=9617)
- [7] [http://okina.univ-angers.fr/publications?f\[keyword\]=9618](http://okina.univ-angers.fr/publications?f[keyword]=9618)
- [8] [http://okina.univ-angers.fr/publications?f\[keyword\]=9584](http://okina.univ-angers.fr/publications?f[keyword]=9584)
- [9] [http://okina.univ-angers.fr/publications?f\[keyword\]=5397](http://okina.univ-angers.fr/publications?f[keyword]=5397)
- [10] [http://okina.univ-angers.fr/publications?f\[keyword\]=9619](http://okina.univ-angers.fr/publications?f[keyword]=9619)
- [11] [http://okina.univ-angers.fr/publications?f\[keyword\]=9620](http://okina.univ-angers.fr/publications?f[keyword]=9620)
- [12] <http://okina.univ-angers.fr/publications/ua5200>
- [13] <http://dx.doi.org/10.1140/epjst/e2009-01077-7>

Publié sur *Okina* (<http://okina.univ-angers.fr>)