



Brillouin scattering-induced rogue waves in self-pulsing fiber lasers

Submitted by Hervé Leblond on Wed, 04/26/2017 - 12:42

Titre	Brillouin scattering-induced rogue waves in self-pulsing fiber lasers
Type de publication	Article de revue
Auteur	Hazard, Pierre-Henry [1], Talbi, Mohamed [2], Mallek, Djouher [3], Kellou, Abdelhamid [4], Leblond, Hervé [5], Sanchez, François [6], Godin, Thomas [7], Hideur, Ammar [8]
Pays	Royaume-Uni
Editeur	Nature Publishing Group
Ville	Londres
Type	Article scientifique dans une revue à comité de lecture
Année	2017
Langue	Anglais
Date	04 Avril 2017
Numéro	7
Pagination	45868
Volume	822
Titre de la revue	Scientific Reports
ISSN	2045-2322
Résumé en anglais	<p>We report the experimental observation of extreme instabilities in a self-pulsing fiber laser under the influence of stimulated Brillouin scattering (SBS). Specifically, we observe temporally localized structures with high intensities that can be referred to as rogue events through their statistical behaviour with highly-skewed intensity distributions. The emergence of these SBS-induced rogue waves is attributed to the interplay between laser operation and resonant Stokes orders. As this behaviour is not accounted for by existing models, we also present numerical simulations showing that such instabilities can be observed in chaotic laser operation. This study opens up new possibilities towards harnessing extreme events in highly-dissipative systems through adapted laser cavity configurations.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua15887 [9]
DOI	10.1038/srep45868 [10]
Lien vers le document	https://www.nature.com/articles/srep45868 [11]
Titre abrégé	Sci. Rep.

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[1] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=26728>

[2] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=26729>

- [3] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=8702>
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- [10] <http://dx.doi.org/10.1038/srep45868>
- [11] <https://www.nature.com/articles/srep45868>

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