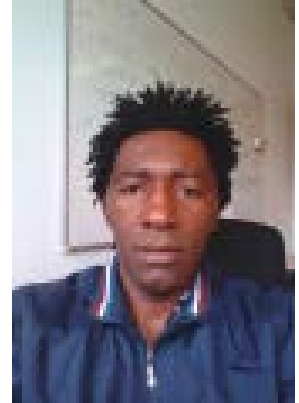


TRR Guest Scientist Lecture / Seminar

Date/Time: 22.12.2017 / 11:00 a.m.
Location: Paderborn, A1.322



Dr. Didier Belobo Belobo

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Nonlinear wave generation in condensates with spin-orbit interaction

Abstract:

The first experimental observation of spin-orbit coupling (SOC) in condensates [1] has attracted a huge amount of experimental and theoretical works in different fields. The importance of studying SOC in condensates in general is strongly motivated by the fundamental role of SOC in many important phenomena and applications in condensed matter physics such spin-based quantum computations [2] and also in related fields like light waves in nonlinear materials, coupled optical wave guides and so on [2]. In this talk, we demonstrate the existence of coherent and periodic nonlinear waves in coupled systems of condensates with SOC. The effect of the SOC on the dynamics will be clarified by means of analytical and numerical simulations.

[1] Y.-J. Lin *et al.*, Nature (London) **471**, 83 (2011).

[2] I. Bloch *et al.*, Nat. Phys. **8**, 267 (2012); Y. Zhang *et al.*, Front. Phys. **11**, 118103 (2016).

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