

Meetings of the Belgian Quantum Physics Initiative

Colloquium



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Quantum Atom Optics: Ocean & Universality in Quantum Dynamics

The experimental platform of atoms manipulated by light offers answers to a broad spectrum of open questions. With two explicit and very different examples I will give you a glimpse how broad this spectrum is. One fundamental question in oceanography is the time when deep water in the ocean was last in exchange with the atmosphere. The possibility to detect Argon 39 atoms one by one allows the dating of water samples as small as ten liters. A very different question in physics is about the existence of universal behavior. Specifically in respect to time dynamics this has only recently been discussed theoretically. Universal meaning, that the evolution does not depend on the initial condition and follows the scaling hypothesis in time and space. I will introduce the concept and present the first observation of this phenomenon in highly controlled ultracold Bose gases.

Thursday 7th FEBRUARY 2019 AT 2.00 P.M.

COFFEE AND TEA WILL BE SERVED AT 3.00 P.M.

Two short talks will follow:

4pm: Vladimir Gladilin (Univ. Antwerpen)

« Vortices in nonequilibrium quantum fluids »

4:30pm: Tom Van Himbeek (LIQ, ULB)

« Quantum random number generation »