Hom-tensor categories and the Hom-Yang-Baxter equation.

Florin Panaite (IMAR Bucarest)

Abstract:

In a recent joint work with M. D. Staic and P. Schrader, we introduced a new type of categorical object called a Hom-tensor category and showed that it provides the appropriate setting for modules over an arbitrary Hom-bialgebra. We introduced as well the notion of Hom-braided category and showed that this is the right setting for modules over quasitriangular Hom-bialgebras. We analyzed the connection between these concepts and the so-called Hom-Yang-Baxter equation introduced by D. Yau. The aim of the talk is to present these concepts and facts. The plan is to begin by recalling classical facts about tensor categories, braided categories and the Yang-Baxter equation, as well as some facts about Hom structures (Hom-associative algebras, Hom-bialgebras etc); thus, we will try to make the talk as self contained as possible.