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Title: The antipode: a fascinating concept

Abstract: It is fair to say that, in the search for the right notion of a locally compact quantum group, say during the last three to four decades, the main problem has been the antipode (or coinverse). It is the quantum analogue of taking the inverse in a group. By now, the antipode is very well understood and it is known to have nice properties. This is exactly what I will talk about.

So, first I will explain what kind of problems arise when defining and studying the antipode for locally compact quantum groups. Then I will tell about several ways to overcome this problem and in particular, about one approach in a more recent treatment of the subject. Finally, I will say something about the more interesting features of the antipode.

Throughout the talk, I will use (and refer to) Hopf algebra theory, as well as the basic examples coming from groups, to motivate this approach.