

FIBER FUNCTORS OF TEMPERLEY-LIEB CATEGORIES

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The celebrated Tannaka duality reveals that a compact group (classical or quantum) can be captured by looking at their representations. In terms of categorical language, this means that compact quantum groups are reconstructed from rigid tensor categories when they are realized inside the category of finite-dimensional vector spaces.

In this talk, we shall work with the Temperley-Lieb category, which is a linearization of the monoidal category of planar tangles and known to be isomorphic to the representation category of the quantum group $SU_q(2)$ as abstract tensor categories, and classify their realizations as representation categories.

In other words, we shall determine compact quantum groups up to isomorphisms under the condition that the representation category in question is abstractly isomorphic to that of $SU_q(2)$.

Reference

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