PARTITION CATEGORIES AND QUANTUM GROUPS

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Abstract: Representation categories of quantum groups can be modelled using so-called partition categories or categories of partitions. According to the Tannaka–Krein duality, we can reconstruct any compact quantum group from its representation theory. Thus finding examples of categories of partitions and possibly classifying them induces corresponding results for quantum groups. In a certain case, we can ignore the linear structure of the partition category. Such categories are called *easy* and were already classified. On the other hand, in the *non-easy* case we still have very few results. In addition, there are some generalizations of partition categories using colorings, where the classification problem is still open even in the easy case.
In the talk we give a brief introduction to the theory of partition categories. Then we mention few recent results providing new examples of partition categories and hence new examples of compact quantum groups in particular in the non-easy case. This talk is partly based on joint work with Moritz Weber.