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**ABSTRACT**

Uwe Franz (University of Bourgogne Franche-Comté)

**Connectedness and Gaussian Parts for Compact Quantum Groups**

**Abstract:** We introduce the Gaussian part of a compact quantum group  $\mathbb{G}$ , namely the largest quantum subgroup of  $\mathbb{G}$  supporting all the Gaussian functionals of  $\mathbb{G}$ . We prove that the Gaussian part is always contained in the Kac part, and characterise Gaussian parts of classical compact groups, duals of classical discrete groups and  $q$ -deformations of compact Lie groups. The notion turns out to be related to a new concept of “strong connectedness” and we exhibit several examples of both strongly connected and totally strongly disconnected compact quantum groups.

Joint work with Amaury Freslon and Adam Skalski. See arXiv:2203.08030.