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Confinement versus 1-form symmetries at large N*

Thursday 2 June 2022 10:00 (1 hour)

There are two known ways to tie quark confinement to symmetries: one way (the older one) in terms of "center symmetry", and the other one (the newer one) is in terms of a "1-form symmetry". By now it is widely accepted that the new idea of 1-form symmetry, which is based on the existence of co-dimension-2 topological operators, is a generalization of the old idea of center symmetry. I'll explain how large N QCD poses a sharp challenge to this notion. It enjoys selection rules that can be explained by center symmetry, but not by 1-form symmetry. I'll explain how these selection rules can be deduced from the properties of certain unconventional topological operators.

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