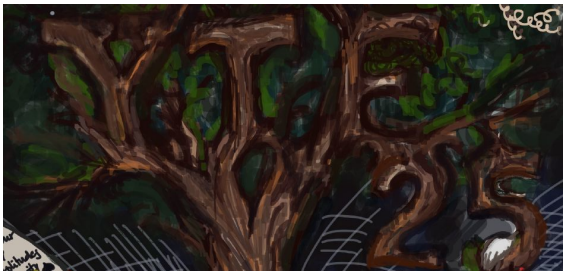

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p-form Generalised Symmetries in Gauge Theories

In recent years, it has been shown that symmetries in quantum field theory extend beyond their action on familiar pointlike operators to include generalised symmetries acting on extended objects. In this talk, I introduce the framework of generalised symmetries, with an emphasis on 1-form and, more generally, p-form symmetries, and explain how they naturally arise in gauge theories. In Maxwell theory, 1-form symmetries play a central role, with the photon appearing as the low-energy Goldstone boson associated with the spontaneous breaking of an electric 1-form symmetry.

Non-Abelian gauge theories also benefit from this framework, where topological features such as centre symmetry and the \theta-term play key roles. I show how the interplay between these ingredients leads to a mixed 't Hooft anomaly with time-reversal symmetry. This anomaly constrains the infrared behaviour of the theory and provides insight into its non-perturbative dynamics.

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