Gauging obstructions & obstructions to gauging

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Abstract

In this talk I will explore the possibility of gauging global symmetries associated to conserved topological charges in Abelian gauge theories. These modifications will be implemented directly on the level of the classifying space and suggest the presence of additional fields participating in a higher group structure. These additional fields come with their own set of topological charges and generically introduce new global symmetries. These constructions also can be used for the cancellation of anomalies.

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