“Non-invertible defects of 4d Yang-Mills”

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Abstract: Symmetries have been a driving force behind advances in modern theoretical physics. Recent developments have led to extensions of the notion of symmetry to higher-form and non-invertible symmetries. While the former have been used to great effect in constraining the dynamics of theories in various dimensions, examples of the latter (let alone dynamical applications) remain few and far between in dimensions greater than 2. In this informal talk, I will show that 4d SO(3) Yang-Mills theory at $\theta = \pi$ has non-invertible defects, whose fusion rules are the higher-dimensional analogs of the Ising fusion rules. Potential dynamical implications will be discussed.