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Alessandro Piazza "Bootstrap bounds on Yang-Mills in AdS"

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Yang-Mills theory in AdS₄ with Dirichlet boundary conditions is expected to undergo a deconfinement-confinement transition as the AdS radius varies, as the global symmetry of the boundary CFT cannot hold in flat space. We apply the conformal bootstrap to four-point functions of non-abelian conserved currents in 3d to place bounds on proposed mechanisms for the transition. We rule out the scenario in which the boundary current decouples by bounding the current central charge. We also obtain bounds on the dimension of the lightest scalar operators, which disfavour a bulk-Higgs mechanism and instead support a transition triggered by a scalar singlet becoming marginal.