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Vacuum Structure of Yang-Mills Theory in Curved Spacetime SAMUEL COLLOPY, New Mexico Tech — The stability of the chromomagnetic Savvidy vacuum in QCD under the influence of positive Riemannian curvature is studied. The heat traces of the operators relevant to SO(2) gauge-invariant Yang-Mills fields and Faddeev-Popov ghosts are calculated on product spaces of  $S^2$  and  $S^1 \times S^1$ . It is shown that the chromomagnetic vacuum with covariantly constant chromomagnetic field is stable in a certain set of radii and field strengths.

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