THE SPHERICALLY SYMMETRIC $SU(2)$ YANG-MILLS FIELD ON THE SCHWARZSCHILD METRIC

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We study the spherically symmetric $SU(2)$ Yang-Mills field on the Schwarzschild metric. This equation has a lot of stationary solutions. We focus on the so called purely magnetic Ansatz which rules out the Coulomb type solutions but for which still a countable number of stationary solutions exist. We show that the zero Yang-Mills curvature solution is stable within this Ansatz and that all the other solutions are instable. For the stability result we give precise decay rates for the local energy of the solution. This is joint work with Sari Ghanem (stability result) and Cécile Huneau (instability result).