



Yang-Mills connections of cohomogeneity one on $SO(n)$ -bundles over Euclidean spheres

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We construct Yang-Mills connections on $SO(n)$ -bundles over spheres equipped with the Euclidean metric. We use a cohomogeneity one group action on the bundle to reduce the Yang-Mills-equation to a system of ordinary differential equations. The system is shown to have solutions by variational methods, using ideas from harmonic map theory. Examples include Yang-Mills connections on each of the countably many principal $SO(6)$ -bundles over S^6 , and countably many Yang-Mills connections on S^{2n} for $n \in \{5, \dots, 9\}$.

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