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*Deformation and Extension of Fibrations of Spheres by Great Circles.*

In 1983, Gluck and Warner proved that the space of all oriented great circle fibrations of the 3-sphere  $S^3$  deformation retracts to the subspace of Hopf fibrations, and so has the homotopy type of a pair of disjoint two-spheres. Since that time, no generalization of this result to higher dimensions has been found, so we instead show that in a certain infinitesimal sense, the space of oriented great circle fibrations of the  $(2n+1)$ -sphere  $S^{2n+1}$  deformation retracts to the subspace of Hopf fibrations. The tools developed to prove this result also show that every germ of a fibration of  $S^{2n+1}$  by great circles extends to such a fibration of all of  $S^{2n+1}$ , a result previously only known for  $S^3$ . (Received September 21, 2015)