

# ON THE EXISTENCE AND CLASSIFICATION OF ISOVARIANT MAPS

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A  $G$ -equivariant map  $f : X \rightarrow Y$  is called  $G$ -isovariant if  $f$  preserves the isotropy groups, *i.e.*,  $G_x = G_{f(x)}$  for every  $x \in X$ . If a  $G$ -homotopy  $H : X \times I \rightarrow Y$  between isovariant maps is also isovariant, then  $H$  is called a  $G$ -isovariant homotopy.

In this talk, we first overview Borsuk-Ulam type results on the existence or nonexistence of isovariant maps between some  $G$ -spheres such as representation spheres, semilinear spheres or homologically linear spheres. Next we discuss the isovariant homotopy classification of isovariant maps from a free  $G$ -manifold to a unitary representation sphere under certain conditions and show Hopf type results for isovariant maps.

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