

Isovariant Borsuk–Ulam type theorems and isovariant maps between representation spaces

Ikumitsu Nagasaki

Kyoto Prefectural University of Medicine, Japan
nagasaki@koto.kpu-m.ac.jp

The talk is based on the joint work with Fumihito Ushitaki (Kyoto Sangyo University)

Session: 31. Representation Theory, Transformation Groups, and Applications

For a compact Lie group G , a G -isovariant map $f : X \rightarrow Y$ between two G -spaces X and Y is a G -equivariant map preserving the isotropy subgroups.

In this talk, we consider isovariant maps between G -representation spaces. First, we review Wasserman's results, as well as our recent results about the isovariant Borsuk–Ulam theorem.

Secondly, we consider bi-isovariant equivalent representations. We say that two representations V and W are *bi-isovariant equivalent* if there exist isovariant maps from V to W and from W to V . We show that if V and W are bi-isovariant, then their dimension functions coincide. Furthermore, if G is connected, these representations are isomorphic. In order to give a proof, we use tom Dieck's and Traczyk's results in representation theory.

References

- [1] I. Nagasaki and F. Ushitaki *New examples of the Borsuk-Ulam groups*, RIMS Kokyuroku Bessatsu (2013), 109–119.