

Minimal number of Borsuk-Ulam coincidence in the homotopy class of a map

Daniel Ventrúscolo

DM-UFSCar, Brazil
daniel@dm.ufscar.br

The talk is based on the joint works with Fabiana S. Cotrim and John Guaschi

Session: 35. Topological fixed point theory and related topics

In some recent works Borsuk-Ulam type theorem has been regarded as a coincidence problem and generalized for maps between manifolds (see [1, 3, 4, 5]). Using Nielsen coincidence approach we describe the minimal number of Borsuk-Ulam coincidences for maps between orientable manifolds, in dimension greater than two such description uses a Nielsen-Borsuk-Ulam number and procedures for its realization. For dimension two it uses some equations in braids groups (not in the pure braids groups as usual in Nielsen coincidence). The presentation is based in two work that still in progress ([2, 6]).

References

- [1] F. S. Cotrim, D. Ventrúscolo, *Nielsen coincidence theory applied to Borsuk Ulam geometric problems*. *Topology and its Applications* 159, 2012, 3738–3745.
- [2] F. S. Cotrim, D. Ventrúscolo, *Nielsen Borsuk-Ulam number and its realization*. preprint.
- [3] P. E. Desideri, P. L. Q. Pergher, D. Ventrúscolo, *Some generalizations of the Borsuk-Ulam Theorem*. *Publicationes Mathematicae (Debrecen)*, 2011, 583–593.
- [4] D. L. Gonçalves, *The Borsuk-Ulam theorem for surfaces*, *Quaestiones Mathematicae* 29, 2006, 117–123.
- [5] D. L. Gonçalves, J. Guaschi, *The Borsuk-Ulam theorem for maps into a surface*. *Topology Appl.* 157, (2011), 1742–1759,
- [6] J. Guaschi, D. Ventrúscolo, *The minimal number of Borsuk-Ulam coincidences on surfaces*, preprint.