

TOPOLOGICAL SURGERY AND APPLICATIONS

SOFIA LAMBROPOULOU

Dept. Mathematics, National Technical University Athens, Greece

E-mail: sofia@math.ntua.gr

ABSTRACT

We discuss topological surgery in dimensions 1, 2 and 3 enriched by local dynamics and we provide the Morse description. Along the way we present some interesting phenomena exhibiting surgery.

This is joint work with Stathis Antoniou and Louis Kauffman.

- [1] Antoniou, S. and Lambropoulou, S. 2017 Extending topological surgery to natural processes and dynamical systems, *PLOS* **12** (9).
- [2] Antoniou, S., Kauffman, L.H. and Lambropoulou, S. 2019 Topological surgery in cosmic phenomena, *Adv. Theor. Math. Phys.* **23**, No. 3.
- [3] Antoniou, S., Kauffman, L.H. and Lambropoulou, S. 2019 Detecting and visualizing 3-dimensional surgery, *J. Knot Theory Ramif.* **28**, 13, 1-29.