

---

# Topological Data Analysis : extracting insights from the "shape" of data

Kathryn Hess Bellwald\*<sup>1</sup>

<sup>1</sup>Brain and Mind Institute, School of Life Sciences, Ecole Polytechnique Fédérale de Lausanne (BMI EPFL) – Suisse

## Résumé

The guiding philosophy of topological data analysis (TDA) is that the "shape" of a point cloud of data should reveal meaningful structure in the data. I will briefly sketch the theoretical foundations of TDA, describe some of its most frequently used and powerful methods, and conclude with examples of significant applications in cell biology, neuroscience, and material science.

**Mots-Clés:** topologie, neuroscience, biologie cellulaire, science des matériaux

---

\*Intervenant