

Summary

Graph, topology, calculus — signal processing, machine learning

- Edge flows (simplicial signals): smoothness, Fourier transform, Hodge thm.

Gradient part + Curl part + Harmonic part

- Processing and learning based on convolutional filters
- Statistical learning via Gaussian process modeling
- Geometry is not included, computer graphics, shape analysis ...
- Other domains: TDA, numerical methods... continuous analogies (vector fields) ...
- Future directions: dynamics on SCs ...

