



## Mathematics and CS Seminar

# GeomTop Seminar: "Topological Data Analysis for Geospatial Data"

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Geospatial data is data about objects, events, or phenomena that are associated to a unique location on Earth (i.e., georeferenced). Geographic Information Science (GIScience) studies data structures and computational techniques to capture, represent, process, and analyze geographic data and information. However, new advancements in geospatial data collection techniques have resulted in high volume multidimensional spatial datasets, which cannot be easily treated using conventional spatial data analysis approaches. Moreover, GIScience is seeking efficient tools for analyzing increasing amount of geospatial data acquired everyday about moving objects. Topological Data Analysis (TDA) seems to be promising in this regards. However, their extension for taking the particular characteristics of geospatial data (e.g., location-awareness, spatial autocorrelation, and spatial dependency) into consideration would be beneficial. In this talk, I will provide some ideas about extension of the classical persistent homology (as a main tool in TDA) that may contribute in better topological analysis of new geospatial datasets.

**Wednesday, February 12, 2020 01:00pm - 02:15pm**

IST Austria Campus Mondi Seminar Room 3, Central Building



This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: <https://ist.ac.at/en/campus/how-to-get-here/> The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.