Using persistent homology for the identification of lasso proteins

Paolo Cavicchioli

Seminar za geometrijsko topologijo, 22.05.2024

This presentation introduces a novel methodology for detecting Lasso proteins, a distinct category of knotted proteins. Traditionally, addressing this challenge involved utilizing surface triangulations, incurring significant computational expenses. The talk will provide a concise overview of persistent homology, highlighting its merits and drawbacks in the context of Lasso protein detection. Several illustrative examples and outcomes will be presented. The research is conducted in collaboration with Professor Boštjan Gabrovšek, Bartosz Greń and Žiga Virk.