On Computing Persistent Homology

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The past fifteen years has witnessed a dramatic increase in the applications of homological algebra to the applied sciences. Several challenges remain, including: (1) how to compute efficiently in homological algebra; (2) how to extend the set of current applications and methods; and, perhaps most importantly, (3) how to educate end-users in the meaning and proper use of homological tools.

This talk will present some new perspectives on computing homology and persistent homology (based on recent work of Greg Henselman) and point to advances beyond persistent homology.

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