

MAGNITUDE, ALPHA MAGNITUDE AND APPLICATIONS

Sara Kalisnik

ETH, Switzerland

sara.kalisnik@math.ethz.ch

Magnitude is an isometric invariant for metric spaces that was introduced by Leinster around 2010, and is currently the object of intense research, since it has been shown to encode many known invariants of metric spaces. In recent work, Govc and Hepworth introduced persistent magnitude, a numerical invariant of a filtered simplicial complex associated to a metric space. Inspired by Govc and Hepworth's definition, we introduced alpha magnitude. Alpha magnitude presents computational advantages over both magnitude as well as Rips magnitude, and is thus an easily computable new measure for the estimation of fractal dimensions of real-world data sets. I will also briefly talk about work in progress, a clustering algorithm based on the alpha magnitude. This is joint work with Miguel O'Malley and Nina Otter?

Joint work with Miguel O'Malley and Nina Otter.