

1154-55-2120 **Antonio Rieser*** (`antonio.rieser@cimat.mx`). *Vietoris-Rips homology through the looking glass.*

Although the Vietoris-Rips complex is over 90 years old, very little is known about the properties of the Vietoris-Rips homology. We describe several new ways in which the Vietoris-Rips complex may be defined, and which help to clarify several of its basic properties. We show that these definitions reduce to classical one on graphs and metric spaces, and we then explore variations of continuity for functions between spaces for which the Vietoris-Rips homology is functorial. We conclude with a definition of homotopy which respects the Vietoris-Rips homology functor (i.e. such that two homotopic functions induce the same map) and, finally, with a discussion of the Kunnet theorem for Vietoris-Rips homology. (Received September 17, 2019)