1145-VU-569 **Boris Goldfarb** and **Jonathan L Grossman***, JonathanLGrossman@gmail.com. *Coarse coherence of metric spaces and groups and its permanence properties.*

This paper introduces two properties of metric spaces: "coarse coherence" and "coarse regular coherence", and specifically applies these properties to finitely generated groups equipped with word metrics. Coarse coherence and coarse regular coherence are geometric counterparts of the classical notion of coherence in homological algebra and of the regular coherence property of groups defined and studied by Waldhausen, respectively. These coarse coherence notions are intelligible in the general context of coarse metric geometry and are coarse invariants. In particular, they are quasi-isometry invariants of spaces and groups. Coarse regular coherence is in fact a weakening of Waldhausen's regular coherence, but can be used as effectively in K-theory computations. This paper demonstrates that coarse regular coherence implies weak regular coherence as defined by Carlsson and Goldfarb, yet all groups known to be weakly regular coherent are also coarsely regular coherent. The class of coarsely regular coherent groups is therefore a large class of groups containing all groups with straight finite decomposition complexity as defined by Dranishnikov and Zarichnyi. This new framework allows us to prove structural results by developing coarse permanence properties for coarse coherence. (Received September 10, 2018)