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Zair Ibragimov* (zibragimov@fullerton.edu), Fullerton, CA 92831. *Transfinite bi-metrics.*

It is known that one-point, hyperbolic-type metrics are not Gromov hyperbolic. These metrics are defined as a supremum of one-point metrics (i.e., metrics constructed using one boundary point) and the supremum is taken over all boundary points. In a recent joint work with Asuman Aksoy and Wesley Whiting we proved that taking the average of the one-point metrics instead of their supremum yields a Gromov hyperbolic metric. Moreover, the Gromov hyperbolicity constant of the resulting metric does not depend on the number of boundary points used in taking the average. In this talk we extend the idea of averaging metrics to the notion of transfinite bi-metrics. In some details we will discuss transfinite Apollonian metric and specific examples of domains where the transfinite Apollonian metric can be computed explicitly. (Received February 27, 2020)