1125-05-58 **Bo Lin** (linbo@berkeley.edu), Berkeley, CA, **Bernd Sturmfels** (bernd@berkeley.edu), Berkeley, CA, and **XIaoxian Tang** and **Ruriko Yoshida*** (ruriko.yoshida@uky.edu), Lexington, KY. *Convexity in treespaces.*

We study the geometry of metrics and convexity structures on the space of phylogenetic trees, here realized as the tropical linear space of all ultrametrics. The CAT(0)-metric of Billera-Holmes-Vogtman arises from the theory of orthant spaces. While its geodesics can be computed by the Owen-Provan algorithm, geodesic triangles are complicated and can have arbitrarily high dimension. Tropical convexity and the tropical metric are better behaved, as they exhibit properties that are desirable for geometric statistics. (Received June 30, 2016)