1151-60-172 **Arjun Krishnan***, Hylan 817, Rochester, NY 14610, and **Firas Rassoul-Agha** and **Timo Seppalainen**. *On the Steele-Zhang conjecture in first-passage percolation.* Preliminary report.

We consider the time-constant of first-passage percolation in a given fixed direction as a function of a positive constant b added to the weights. The classical Hammersley-Welsh criterion relates the regularity of this function to the existence of a limiting geodesic length in a given direction. Steele and Zhang conjectured that this function is differentiable at all values $b > 0$ for Bernoulli weights. We report on progress on this problem. (Received August 17, 2019)