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**Colin Adams\*** (cadams@williams.edu), Bronfman Science Center, 18 Hoxsey St., Williamstown, MA 01267, and **Rose Kaplan-Kelly, Michael Moore, Brandon Shapiro, Shruthi Sridhar** and **Joshua Wakefield**. *Densities of hyperbolic cusp invariants*.

We find that cusp densities of hyperbolic knots in  $S^3$  are dense in  $[0, 0.6826 \dots]$  and those of links are dense in  $[0, 0.853 \dots]$ . We define a new invariant associated with cusp volume, the cusp crossing density, as the ratio between the cusp volume and the crossing number of a link, and show that cusp crossing density for links is bounded above by  $3.1263 \dots$ . Moreover, there is a sequence of links with cusp crossing density approaching 3. The least upper bound for cusp crossing density remains an open question. For two-component hyperbolic links, cusp crossing density is shown to be dense in the interval  $[0, 1.6923 \dots]$  and for all hyperbolic links, cusp crossing density is shown to be dense in  $[0, 2.120 \dots]$ . (Received March 10, 2017)