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Marc Lackenby and **Jessica S Purcell*** (jpurcell@math.byu.edu). *Cusp volumes of alternating knots.*

We show that the cusp volume of a hyperbolic alternating knot can be bounded above and below in terms of the twist number of an alternating diagram of the knot. This answers a question of Thistlethwaite, and gives evidence for a stronger conjecture of Thistlethwaite. In addition to giving diagrammatical estimates on cusp volume, the result also leads to geometric estimates on lengths of slopes, in terms of a diagram of the knot. All these estimates are explicit. This is joint work with Marc Lackenby. (Received August 23, 2013)