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Kenneth C Millett* (millett@math.ucsb.edu), Department of Mathematics, UCSB, Santa Barbara, CA 93106. *More knots in knots: a study of classical knot diagrams.*

The structure of classical minimal prime knot presentations suggests that there are often, perhaps always, sub segments that present either the trefoil or the figure-eight knot. In joint work with Alex Rich, we undertook a comprehensive study of the sub knots of the minimal prime knot presentations through 15 crossings and that shows that this is always the case for these knot presentations. Among this set of knots, there are only 109, or 0.3 percent, that do not contain a trefoil knot. On average, the 14 crossing prime knot presentations contain 9 percent trefoils and 3.5 percent figure-eight knots among the average of 27.4 distinct types of sub knots. We have identified several infinite minimal alternating prime knot families that do not contain trefoils but always contain figure-eight knots. We report the detailed statistics of sub knots of prime knots and, using knot presentation fingerprints, illustrate the complex character of the sub knots of these classic minimal prime knot presentations. (Received August 09, 2016)