The width of Satellite Knots

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Abstract. Width is a knot invariant first introduced by Gabai in 1980s. In the paper, I will discuss the relationship between width of a satellite knots and its companion. In particular, as a joint work of me and Qilong Guo, we proved that $w(K)$ is no less than $n^2w(J)$, where $w(.)$ is the width of a knot and K is a satellite knot with companion J and winding number n. Furthermore, recently we also proved that in the case that K is a whitehead double of J, where the winding number is 0, we can replace n^2 by 4, which is the square of the wrapping number of K. The general case is still open though.