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Maggie Miller* (maggiehm@mit.edu) and **Alexander Zupan** (zupan@unl.edu). *Characterizing handle-ribbon knots.*

Kauffman conjectured that a knot K is slice if and only if it bounds a genus- g Seifert surface containing a framed g -component slice link as a cut system. It is easy to show that a knot is ribbon if and only if it bounds a genus- g Seifert surface containing a g -component zero-framed unlink as a cut system. I will describe why an intermediate statement is true: a knot is handle-ribbon (aka strongly homotopy-ribbon) if and only if it bounds a genus- g Seifert surface containing a framed g -component R link L as a cut system – i.e. surface-framed surgery on L yields $\#_g S^1 \times S^2$. This gives a 3-dimensional definition of a 4-dimensional property. (Received September 08, 2020)