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Priyam Patel* (patel@math.ucsb.edu), **Tarik Aougab** and **Samuel Taylor**. *Lifting curves on surfaces via 3-manifolds and the curve complex*. Preliminary report.

Given two simple closed curves α and β intersecting many times on an orientable surface S , we are interested in studying the minimal degree of a finite cover of S such that there is a lift of α disjoint from a lift of β . In joint work with Tarik Aougab and Sam Taylor, we use the geometry of hyperbolic 3-manifolds to obtain lower bounds on this degree in terms of curve complex distance between the curves α and β . After describing some of the techniques we use, I will highlight an interesting application of our work that gives lower bounds on the degrees of special covers for certain cube complexes associated to surfaces. (Received September 25, 2017)