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The structure of graphs with no H -immersion

Arguably the most well known result regarding graph minors is the Kuratowski-Wagner Theorem, which characterizes planar graphs as those excluding $K_{3,3}$ and K_5 as minors. Further, precise structure of H -minor free graphs is known for some small graphs H , most famously when H is one of K_4 , K_5 , $K_{3,3}$, W_4 , W_5 , Prism, or the Cube. In the setting of graph immersions, however, there was a lack of such precise characterizations prior to our work. In this talk, I will present results describing H -immersion free graphs, where H is one of K_4 , W_4 , Prism, or $K_{3,3}$.

Joint work with Matt DeVos.