

In this talk, we consider the problem of computing compact routing tables for minor-free graphs (that exclude K_r) in the HYBRID communication model. More precisely, we present a novel idea to create sparse covers with diameter blowup $O(r)$ and degree $O(\log(n))$ for any distance parameter. This scheme directly implies a good routing scheme.

Our idea is based on a new insight into our distributed padded decomposition scheme for planar graphs that allows to extend it to minor-free graphs. It combines state-of-the-art distributed approximation algorithms [ITCS '21, STOC '22] with state-of-the-art padded decomposition schemes for sequential models [STOC '15, APPROX '20].

Our approach achieves "the best of both worlds" with regard to runtime and quality of the decomposition.