We present a randomized distributed algorithm for the P2P-CONGEST model that, with high probability (w.h.p.), given an input graph $G = (V, E)$ computes a cut of G which constitutes a $(2 + \varepsilon)$ approximation of a minimum edge cut of G in $O(1/\varepsilon^4 \log^5(n) \log\log(n))$ communication rounds. The algorithm makes heavy use of sparse edge certificates, for which we provide a $O(k \log(n))$ algorithm that constructs a sparse certificate for k-edge-connectivity, w.h.p.
As a sub-result, we present an algorithm that computes an $\Theta(\log n)$ approximation of the minimum cut size of an input graph in $O(\log^3(n))$ w.h.p. in the P2P-CONGEST model.
We additionally show that algorithms created for the Minor-Aggregation interface can be implemented in the P2P-CONGEST model with a polylogarithmic runtime overhead factor. This implies very efficient implementations of various algorithms created for the Minor-Aggregation model in the P2P-CONGEST model. Relevant to our results, this includes a polylogarithmic algorithm for the exact minimum cut in the P2P-CONGEST model where a naive implementation would take $\Omega(\log20\ n)$.