

Comment 01 on
ECCC TR95-062

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In ECCC report TR95-062: *On Data Structure Tradeoffs and an Application to Union-Find*, we wrote (bottom of p.11):

“We remark that, in this algorithm, we must have an assumption such as $m \geq n$ for obtaining $O(k)$ -time find... In fact, this is unavoidable in general, provided that the update time is required to be $O(\alpha_k(n))$ ”

This statement is misleading because in general the necessity of the assumption is “unavoidable” only if the time for updates is demanded to be $O(\alpha_k(n))$ in *worst-case*. However the algorithm that we presented achieves such a bound only in the amortized sense, and a union in $O(\alpha_k(n))$ amortized time *can* possibly be combined with $O(k)$ -time find. The special case of $O(\log n)$ time per union is actually rather easy to achieve (use flat trees with union by weight).

Thanks to Stephen Alstrup for pointing out the error.