

Our Results

$$\bullet \quad F_p(x) = \sum_{i=1}^d |x_i|^p$$

- **Theorem** [K, Pagh, Thorup, Woodruff FOCS '23]: For $p > 2$, there is an algorithm using $\tilde{O}(d^{1-2/p})$ space and an update time of $O(1)$

• Space is optimal point only! Log factors!

- Time in the WordRAM model with $O(\log d)$ bits word size

- Improves on $\text{poly}(d)$ update time of Andoni '17

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