1086-20-1413 **Nolan R. Wallach***, Department of Mathematics, University of California, San Diego, La Jolla, CA 92093, and **David Meyer**. *The (quantum) hidden subgroup problem for ax+b groups.* Preliminary report.

If F is a finite field then we denote by $G(F)$ the group of affine transformations of F. Let $|F|$ be the order of F. We give an algorithm that solves the hidden subgroup problem with probability $1-\varepsilon$ after $O(\log(\varepsilon)^2 \log|F|)$ reptitions that has the complexity of 3 multiplicative quantum Forurier transforms and 3 quantum addititive Fourier transforms. The basic ingredient in the algorithm is the set of wavelets associated to the unique irreducible representation that is not one dimensional. The proof of the algorithm uses basic elementary number theory (such as the theory of Gauss sums). (Received September 21, 2012)