## Abstract Submitted for the MAR14 Meeting of The American Physical Society

The Local Fock Exchange Potential in Kohn Sham Theory THOMAS HOLLINS, STEWART CLARK, NIKITAS GIDOPOULOS, Durham University, CONDENSED MATTER THEORY GROUP TEAM — We propose the Local Fock Exchange (LFX) Potential as an alternative to the Exchange Optimised Effective Potential (XOEP) for the definition of the (exact) exchange potential in Kohn Sham theory. Physically equivalent to XOEP, the LFX potential is inherently well behaved when expanded in finite basis sets. After an introduction to the LFX potential, we shall present calculations and compare results of the LFXP with XOEP for a large number of systems (insulators, semiconductors and antiferromagnets), as well as presenting an extension of XOEP and LFX to metals.

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