1098-43-303 **Benjamin Manning*** (manning5@math.umd.edu), University of Maryland, Mathematics Building, College Park, MD 20742. *Subspaces of $L^2(\mathbb{R})$ Invariant Under Crystallographic Shifts.*

We present a generalization of the theory of translation-invariant subspaces to a class of subspaces invariant under shifts from a crystallographic group. Since these groups are non-commutative, operator valued brackets replace scalar valued brackets to prove various classifications of shift-invariant subspaces that are analogous to well known classifications of translation-invariant subspaces. Additionally, we demonstrate how our tools developed from this shift-invariant subspace theory apply to the theory of Composite-Dilation Wavelets. (Received January 28, 2014)