1086-11-658 **Youngsoo Kim*** (kimy@mytu.tuskegee.edu), Department of Mathematics, Kenney Hall, Suite 70-365, Tuskegee University, Tuskegee, AL 36088. *Semistability of Root Lattices And Perfect Lattices.*

I will present the definition of canonical filtration and semistability of a lattice from a version of reduction theory of lattices. Then we investigate the semistability of root lattices and perfect lattices. It turns out that all irreducible root lattices are semistable and perfect lattices of dimension at most 7 are semistable. But there are rare cases of unstable perfect lattices in higher dimensions. For example, there is a unique lattice that is not semistable among 10916 perfect lattices in dimension 8. (Received September 10, 2012)