1086-11-569 **Lenny Fukshansky** and **Kathleen Petersen*** (`petersen@math.fsu.edu`). *Well-Rounded Ideal Lattices.*

A lattice of full rank in a Euclidean space is called well-rounded if its set of minimal vectors spans the whole space. Well-rounded lattices are important in discrete optimization, in particular in the investigation of sphere packing, sphere covering, and kissing number problems, as well as in coding theory. I will discuss the well-rounded property in the context of lattices associated to rings of integers of number fields and sub-lattices associated to ideals. I'll answer the question of which of these integer lattices are well-rounded. I'll also show the existence of infinitely many well-rounded ideal lattices in the quadratic case. (Received September 07, 2012)