1067-16-989 **Kenneth L Price\*** (`pricek@uwosh.edu`), Mathematics Department, University of Wisconsin Oshkosh, 800 Algoma Boulevard, Oshkosh, WI 54901. *Good Gradings from Relations.* Preliminary report.

Balanced relations were defined by G. Abrams to extend the convolution product used in the construction of incidence rings. We study the generalized incidence rings and construct good semigroup gradings using homomorphisms on the relations with finite images. Many of our theorems are based on known results for other types of graded algebras.

We define stable relations, which form a class between balanced relations and preorders. Compressions are also introduced and in our main theorem we prove every finite stable relation is the compression of a preorder. Thus there is an injective homomorphism from a generalized incidence ring over a finite stable relation to a matrix ring. (Received September 17, 2010)