THE IDEMPOTENT QUIVER OF A NEARRING

GARY L. PETERSON

JAMES MADISON UNIVERSITY, USA

A **quiver** is a directed graph. In ring theory, several types of quivers have been developed that play important roles in representation theory of algebras. One of these, which can be found in [5], is formed by using primitive idempotents corresponding to the isomorphism classes of minimal modules for its vertices. Building upon the results from [1]- [4] and [6], we shall see how it is possible to extend this quiver with idempotent vertices from rings to nearrings. We shall also consider how the resulting quiver gives us information about both the nearring and its modules and the use of SONATA for its calculation.

References

[1] H. Lausch, Idempotents and blocks in artinian d. g. nearrings with identity element, Math. Ann., 188(1970), 43-52

[2] G. Peterson, Lifting idempotents in near-rings, Arch. Math., 51(1988), 208-212

[3] G. Peterson, Blocks in tame near-rings, Comm. Algebra, 20(1992), 1763-1775

[4] G. Peterson, Blocks in near-rings, Near-Rings and Near-Fields; Proc. of a Conf. held at the Mathematishe Forschungsinstitut Oberwolfach 5-11 Nov. 1989, 170-180, 1995

[5] R. Pierce, Associative algebras, Spring-Verlag, 1982

[6] S. Scott, Idempotents in near-rings with minimal condition, J. London Math. Soc., 6(1973), 464-466