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(philipp.perepelitsky@gmail.com). *p-permutation equivalences and auto-equivalences.*

Let  $A \subseteq FG$  and  $B \subseteq FH$  be two block algebras of finite groups  $G$  and  $H$  over an algebraically closed field  $F$  of characteristic  $p > 0$ . A  $p$ -permutation equivalence between  $A$  and  $B$  is an element in the representation group of  $(A, B)$ -bimodules that are direct summands of permutation bimodules and have twisted diagonal vertices. These equivalences, although only elements in a representation group, preserve all relevant invariants of blocks. We recall definitions and properties of  $p$ -permutation equivalences and report on new work on the finite group of auto-equivalences of blocks with a complete result for cyclic defect groups. This is joint work with Philipp Perepelitsky. (Received September 15, 2019)