1104-20-240 **Robert Boltje*** (boltje@ucsc.edu) and **Philipp Perepelitsky**. *On p-permutation bimodules and equivalences between blocks of group algebras.*

Let F be a an algebraically closed field of characteristic $p > 0$ and let G and H be finite groups. An FG-module is called a *p-permutation module* if its restriction to a Sylow p-subgroup of G is a permutation module. Similarly one defines p-permutation bimodules for FG and FH. Assume now that A is a block of FG and B is a block of FH. Motivated by Rickard's notion of splendid chain complexes in connection with Broué's Abelian Defect Group Conjecture, we define a p-permutation equivalence between A and B to be a virtual p-permutation (A, B)-bimodule γ in an appropriate representation group such that $\gamma \otimes_H \gamma^\circ = [A]$ and $\gamma^\circ \otimes_G \gamma = [B]$. Every splendid Rickard equivalence between A and B (a finite chain complex of p-permutation (A, B)-bimodules) induces such an element γ by taking Lefschetz elements.

We investigate which invariants of blocks are preserved under p-permutation equivalences, prove some restrictive properties about their shape and present results on the group of p-permutation auto-equivalences of a block. (Received September 02, 2014)