1024-16-219   **Susan J. Sierra*** (`ssierra@umich.edu`), Department of Mathematics, 2074 East Hall, University of Michigan, 530 Church Street, Ann Arbor, MI 48109-1043. *Equivalences of graded categories and Picard groups.*

We consider when two graded rings have equivalent categories of graded modules and give a necessary and sufficient condition that generalizes both classical Morita theory and the work of Zhang on connected graded rings. We apply this to relate the autoequivalence group (or Picard group) of a graded module category to the graded equivalence class of the category. As an application, we classify all rings graded equivalent to the first Weyl algebra in the Euler gradation and produce some suprising examples. (Received January 09, 2007)