1086-65-1386     **Michael L Parks\*** (`mlparks@sandia.gov`), Sandia National Laboratories, P.O. Box 5800, MS 1320, Albuquerque, NM 87185, and **David J Littlewood**, **John A Mitchell** and **Stewart A Silling**. *Peridigm: A New Paradigm in Computational Peridynamics.*

Peridynamics is a nonlocal extension of classical continuum mechanics, governed by an integro-differential equation. We survey the state-of-the-art in computational peridynamics by discussing capabilities of the newly available open-source Peridynamics code "Peridigm," discussing the nonlocal computational structure of the code, reviewing discretization techniques and solution methods, and showing demonstration problems. (Received September 21, 2012)