1030-14-360 **Daniel J Bates*** (dbates1@nd.edu), IMA, University of Minnesota, 114 Lind Hall, 207 Church Street SE, Minneapolis, MN 55455. *A new method for real root-finding using Gale duality.* Preliminary report.

A new continuation method for finding the real isolated solutions of certain polynomial systems will be discussed. This method does not involve the direct use of homotopies and differs from standard homotopy methods in that it avoids much of the cost of computing all complex isolated solutions. Fewnomial theory, particularly Gale duality, is the key to this new technique. This talk will focus on the algorithm more than the underlying theory. This is joint work with Frank Sottile (Texas A&M). (Received August 07, 2007)