1135-35-1054 **Jeremy L. Marzuola*** (marzuola@math.unc.edu). *Symmetry Breaking in Density Functional Theory due to Dirac Exchange for a Hydrogen Molecule.*

We study symmetry breaking of a hydrogen molecule system under the density functional theory with Dirac exchange (the XLDA model). The constrained variational problem undergoes a spontaneous symmetry breaking, as the strength of the non-convex exchange term increases. We further characterize the limiting behavior of the minimizer when the strength of the exchange term goes to infinity. (Received September 18, 2017)