

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**The symmetries of interacting helices of charge** JONATHAN LANDY, JOSEPH RUDNICK, UCLA Dept. of Physics and Astronomy — Many important biological molecules are helical in shape. In vivo, these molecules are often highly charged and thus strongly repel. In certain instances, however, they are found to be packed at high density. This results in systems with a high degree of coupling between lattice packing structure and internal molecular symmetry. We present various results of a symmetry based analysis of the pair interaction. In particular, we provide a new perspective on a previously obtained result by Kornyshev and Leikin [1]: the pair interaction is a nowhere continuous function of the angle between charges on a single helix. 1. A.A. Kornyshev and S. Leikin, *Biophys. J.* 75 (1998).

Jonathan Landy  
UCLA Dept. of Physics and Astronomy

Date submitted: 18 Nov 2009

Electronic form version 1.4