1044-19-136 **Daniel A Ramras*** (dan.ramras@vanderbilt.edu), Department of Mathematics, 1326 Stevenson Center, Vanderbilt University, Nashville, TN 37240. *Periodicity in deformation K-theory.* Preliminary report.

The deformation K-theory spectrum K(G) of a discrete group G serves as a homotopy theoretical analogue of the ordinary representation ring R(G). In all known cases, K(G) is 2-periodic above some degree (in most of these cases, the periodic groups agree with complex K-theory of BG, but not always!). Work of Tyler Lawson relates this periodicity phenomenon to the topology of the stable moduli space of representations.

I'll explain Lawson's results, and describe several examples of periodicity that can be derived using them. These include fundamental groups surfaces (where gauge theory also plays a key role), and, more generally, certain surface bundles over surfaces. (Received August 29, 2008)