Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-35-1456 **Regina Speicher*** (speicher@math.uconn.edu), 109A Stonemill Road, Storrs, CT 06268. *Saddle point solutions of an Allen-Cahn type equation: a numerical investigation.* Preliminary report.

We numerically investigate heteroclinic solutions of an Allen-Cahn type partial differential equation. Rabinowitz and Stredulinsky proved the existence of such solutions using variational methods. These solutions are local minima and are found using a steepest descent program. Having located distinct minima, it is natural to then look for saddle point solutions. We find these using a mountain pass algorithm and then compare their qualities with those of the previously found local minima. (Received October 05, 2004)