1057-35-76 **Burgess Davis*** (bdavis@stat.purdue.edu), Mathematics Department, Purdue University, West Lafayette, IN 47906, and **Majid Hosseini** (majid.hosseini@gmail.com), Division of Natural Sciences, Lakeland College, PO Box 359, Sheboygan, WI 53082. *On the spectral gap of convex doubly symmetric planar domains.*

It is known that the spectral gap (the difference between the second and first eigenvalues) of an oriented convex domain D symmetric about both axes can not be smaller than the gap of a rectangle symmetric about both axes which contains D. We use the ergodic theorem to give a lower bound for the difference of these gaps. (Received January 07, 2010)