1046-54-215 **Nathan A Carlson*** (ncarlson@math.arizona.edu), Department of Mathematics, Univ. Arizona, 617 N. Santa Rita Ave., P.O. Box 210089, Tucson, AZ 85721–0089, and **Guit-Jan Ridderbos**, Faculty of Sciences, Dept. of Mathematics, Vrije Universiteit, De Boelelaan 1081A, 1081 HV Amsterdam, Netherlands. *A new cardinality bound on homogeneous topological spaces via the Erdös-Rado theorem.*

In 1978 E. van Douwen demonstrated that well-known cardinality bounds on Hausdorff topological spaces can be improved if the space is presumed to be homogeneous. Using the Erdös-Rado Theorem, we give a substantial improvement on the van Douwen bound, answering a question of Jan van Mill. Partition relations have previously been used to prove cardinality bounds, but our result appears to be the first application of a partition relation in the context of homogeneity. (Received August 19, 2008)