Electronic Transactions on Numerical Analysis.
Volume 35, pp. 1-16, 2009.

ISSN 1068-9613.

ETNA
Kent State University
http://etna.math.kent.edu

DIAMETER BOUNDS FOR EQUAL AREA PARTITIONS OF THE UNIT SPHERE*

PAUL LEOPARDI†

Abstract. The recursive zonal equal area (EQ) sphere partitioning algorithm is a practical algorithm for partitioning higher dimensional spheres into regions of equal area and small diameter. Another such construction is due to Feige and Schechtman. This paper gives a proof for the bounds on the diameter of regions for each of these partitions.

Key words. sphere, partition, area, diameter, zone

AMS subject classifications. 11K38, 31-04, 51M15, 52C99, 74G65

*Received January 10, 2008. Accepted for publication December 10, 2008. Published online on March 6, 2009. Recommended by V. Andriyevskyy.
†Centre for Mathematics and its Applications, Bldg 27, The Australian National University, ACT 0200, Australia (paul.leopardi@anu.edu.au).