1077-VK-799 **Sridevi Pudipeddi*** (sridevi.pudipeddi@gmail.com), 1920 Lee Boulevard, North Mankato, MN 56003, and **Ravi Chityala** (chityala@msi.umn.edu), 599 Walter Library, 117 Pleasant Street SE, Minneapolis, MN 55455. *Method to extract names of geographical features from images of maps - A theoretical case study.* Preliminary report.

There are thousands of hand drawn maps of Antarctica waiting to be digitized. These maps contain various first-order geographical features like coasts, seas, plateaus, glaciers etc. Due to the extent of these features, their names are spelled over a large area of the map along a contour. A human can perceptually understand that all these letters belong to a word but it is challenging to make the computers perform the same. If the individual letters can be combined to form a word, it can then be transcribed using an Optical Character Recognition (OCR) program, so that text-based queries can be performed. In this paper, we have applied the idea of perceptual grouping to simulated images containing text with letters separated by large distance. The centroid of each of the letter is determined. Finally, the centroids are then grouped based on their proximity to other centroids and also the direction between the pairs of centroid. Once the letters are grouped, the images of the individual letters were given to OCR after appropriate transformation. We applied the technique on many simulated images containing a total of 12 words with 66 letters. The grouping process determined accurately 65 of the 66 letters and assembled them correctly in to a word, giving a close to 100% accuracy. (Received September 12, 2011)