

Implementation of a Method of Crater Detection Using Principal Component Analysis in FPGA

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Abstract : We propose a method of crater detection from the image of the lunar surface captured by the small space probe. We use the principal component analysis (PCA) to detect craters. Nevertheless, considering the severe environment of the space, it is impossible to use generic computer in practice. Accordingly, we have to implement the method in FPGA. This paper compares FPGA and generic computer by the processing time of a method of crater detection using principal component analysis.

Keywords : crater, PCA, eigenvector, strength value, FPGA, processing time

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