

## Development of smooth area detection method for selection of landing site on a small body

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Hayabusa2 arrived at asteroid Ryugu on June 2018 and scheduled to conduct touch-down to its surface. We have developed a smooth area detection method for selecting smooth area for landing on a small body such as an asteroid. The small dark or bright spot of 1 pixel scale which might be an boulder, or some obstacles are detected by subtracting the smoothed images via median filter from the raw images. Then the coverage of these possible boulder or obstacle pixels are calculated for a circular area which represents the footprint of the accuracy of the landing, and the area with the less coverage is selected as the safer area for landing. Furthermore, the method based on the clustering of texture of the small block area. Application to Ryugu Images obtained by Hayabusa2 ONC-T will be introduced in the presentation.

Keywords: automatic detection, smooth area, clustering, median filter