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Room:Convention Hall

Time:May 24 14:00-16:30

## Detection of the cover change pattern of a coral community by satellite images

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Global and regional environmental changes (global warming, extreme weather, terrestrial runoff, etc.) can cause serious effects on coastal areas. Coral reefs have been damaged by multiple disturbances (e.g., rising sea temperature and soil runoff from adjacent lands). Several methods have been used to monitor these changes in the population structure of corals and seaweeds so far. In-situ monitoring includes observation of coverage of corals and seaweeds by snorkeling or diving. Although detailed examination is possible using these methods, it is difficult to observe the changes in large areas with high frequency. To solve these problems, it is effective to analyze satellite images that can observe the large area. In this research, we calculate the cover change pattern of a coral community from the past to present, and evaluate the validity by comparing it with the result of a long-term in-situ observation at Shiraho in Ishigaki Island, Okinawa. Green DN (Digital Number) value of LANDSAT5/TM and ALOS/AVNIR2 increased in the high coral coverage area. Moreover, the spatial distribution of the green DN value changed similar to the results of in-situ observation. Therefore, the satellite images can detect the cover change pattern of a coral community.