

Clarification of short-term topographic change in the Kujukuri coastal sand dunes using UAS-SfM photogrammetry

*Lee Seulgi¹, Yasutaka Nakata¹, Takashi Oguchi¹

1. The University of Tokyo

This study discusses change in the small-scale topography of Kujukuri coastal dune located in Chiba Prefecture, Japan. Throughout the study, we investigated the short-term formation mechanism of the dune. Previous studies dealt with these dunes because they represent large coastal dune in Japan and their fast change allows us to examine the dynamics of coastal dunes. This study focuses on a relatively short time period. Studies on topographic change during a short period has gained recent attention because of the increased availability of high-resolution topographic data from newly advanced techniques such as unmanned aerial system-based structure-from-motion (UAS-SfM) photogrammetry and terrestrial laser scanning (TLS). Our detailed data were acquired through UAS-SfM photogrammetry, and aerial photographs of the past 70 years were also used for observing general topographic change. We targeted dynamics of sand dunes with the natural state and tried to clarify short-term topographic change due to sand movement.

Keywords: Coastal dune, UAS-SfM