

EGU2020-6257

<https://doi.org/10.5194/egusphere-egu2020-6257>

EGU General Assembly 2020

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Detecting geological structures in coastal area of Buan, South Korea using unmanned aerial vehicle images

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This study attempted to use unmanned aerial vehicle (UAV) photogrammetry for structural mapping at limited exposure outcrops in the west coast area of Buan, South Korea. The west coast area of Buan has a large tidal range, and there are restrictions for traditional structure mapping. High spatial resolution (about 4.5 cm per pixel) UAV images were obtained at low tide from a selected study site. The UAV survey identified 50 brittle structures (fractures and faults that were divided into three groups) and changes in the bedding trace. The bedding trace demonstrates various directional verging of the fold geometry that indicates slump-fault structures. While more research is still necessary, this study demonstrated that UAV mapping techniques are very useful for geological structural analysis in coastal areas.