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Title

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Theme -Theme 2: Observing in Support of Adaptation and Mitigation

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Poster title (brief) Monitoring the Beaufort Sea coast using very high resolution remote sensing

Abstract - text box

Arctic permafrost coasts are major carbon (Schuur et al., 2015) and mercury pools (Schuster et al., 2018). They represent about 34% of the Earth's coastline, with long sections affected by high erosion rates (Fritz et al, 2017), increasingly threatening coastal communities. Year-round reduction in Arctic sea ice is forecasted and by the end of the 21st century, models indicate a decrease in sea ice area from 43 to 94% in September and from 8 to 34% in February (IPCC, 2014). An increase of the sea-ice free season leads to a longer exposure of coasts to wave action. Further, climate warming is also expected to modify the contribution of terrestrial erosion (Fritz et al., 2015, Ramage et al., 2018, Irrgang et al., 2018). Within the project EU Horizon2020 project NUNATARYUK, we are updating the mapping of the Arctic coast, with the Canadian Beaufort coast as a case-study. The surveying methodology includes: i. a high resolution update of the coastline mapping and change rates using Pleiades (CNES) satellite acquisitions from 2018, ii. a survey using RTK-UAV aerial imagery of long-term monitoring sites from the Canada-US border to King Point, and iii. the experimental use of TerraSAR-X staring spotlight scenes at key sites to monitor intraseasonal dynamics of cliff edge retreat.

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