



## **Monitoring ice-calving at the Astrolabe glacier (Antarctica) with seismological and Sentinel-2 satellite data**

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# Monitoring ice-calving at the Astrolabe glacier (Antarctica) with seismological and Sentinel-2 satellite data.



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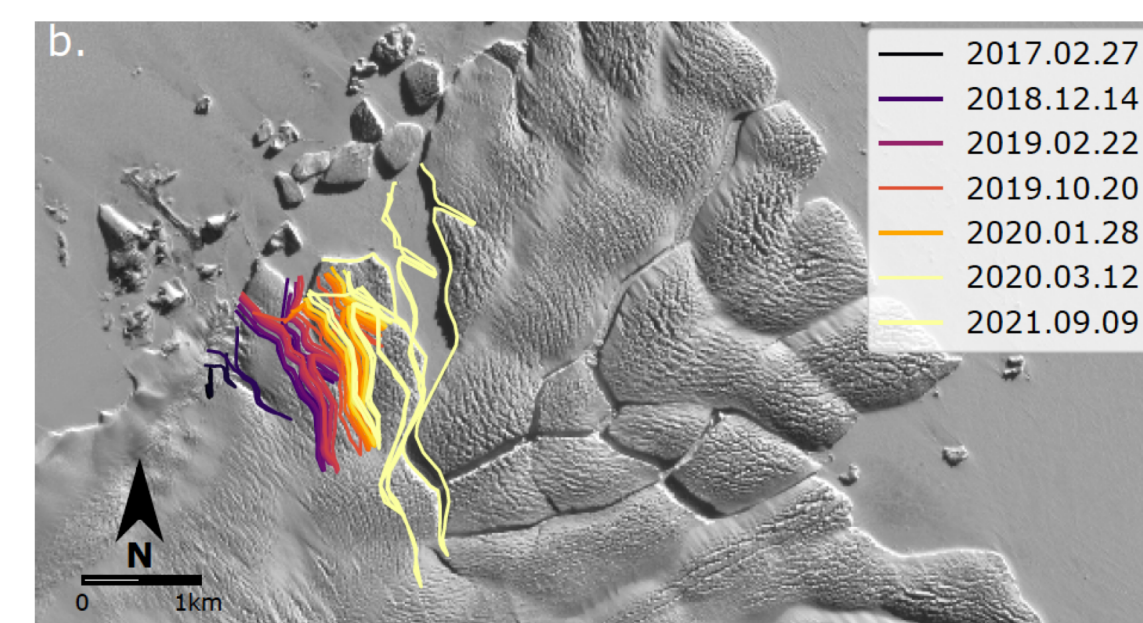
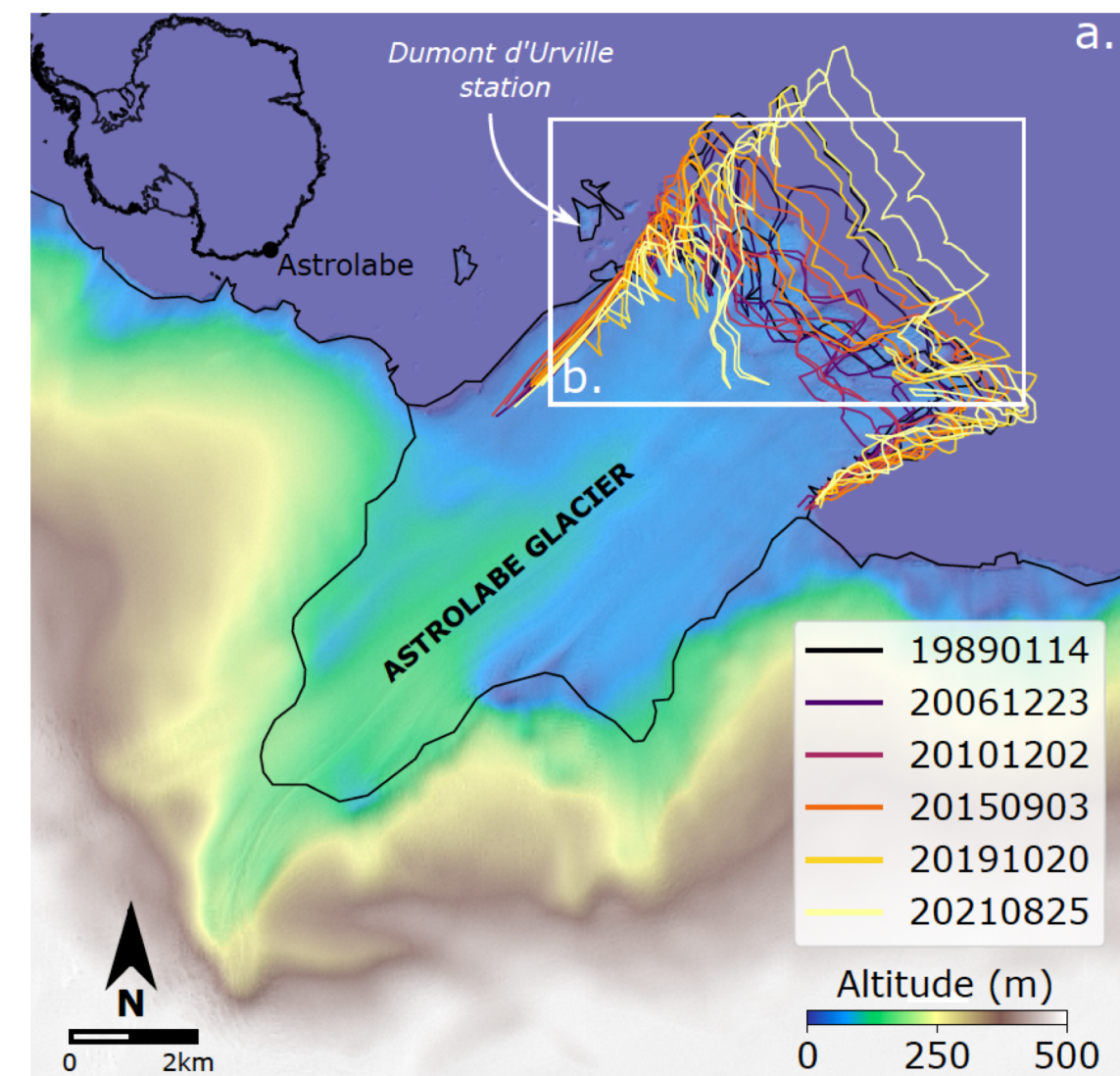
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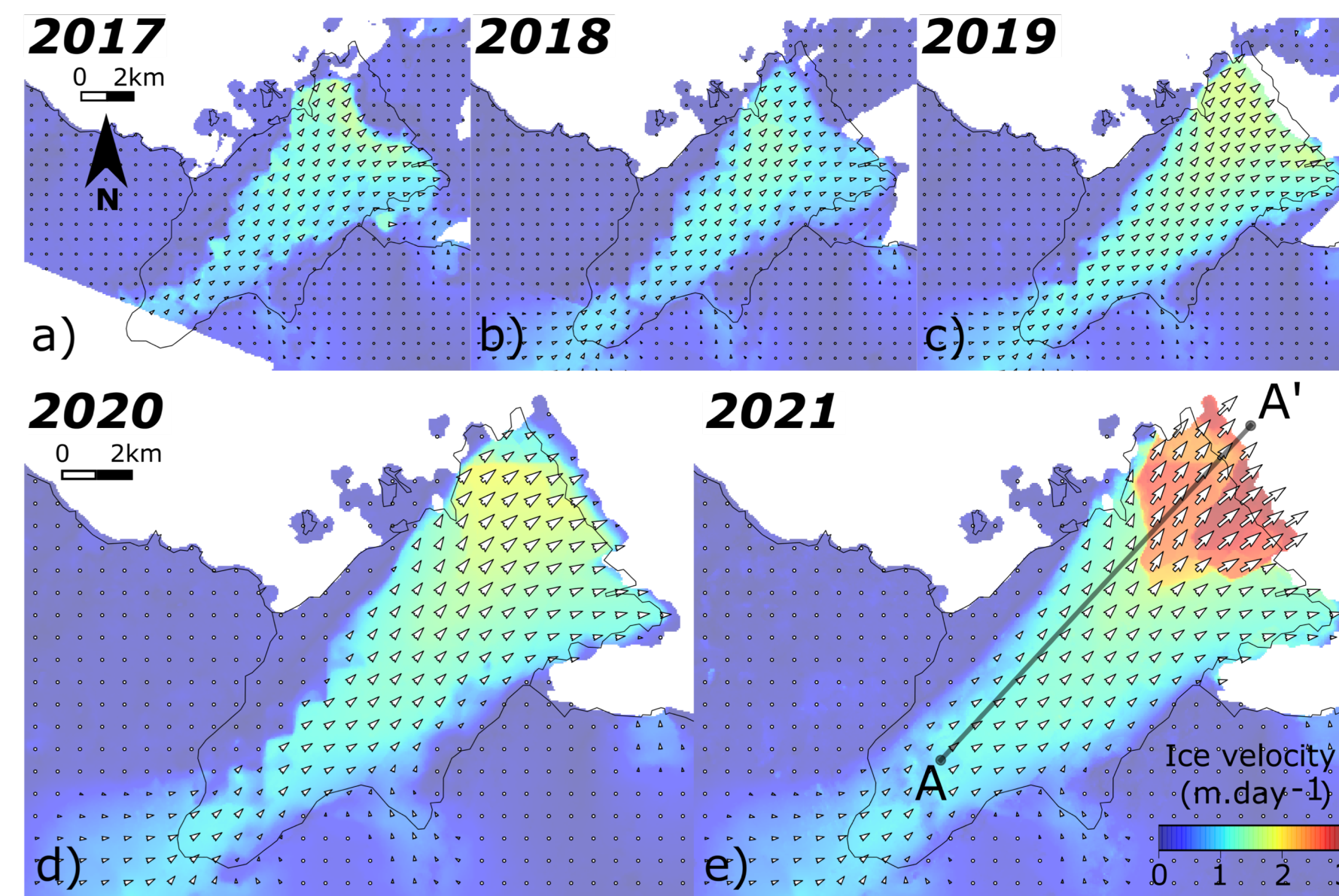
<sup>4</sup> : Institut des Géosciences de l'Environnement, Université Grenoble Alpes, CNRS UMR 5001, Grenoble.



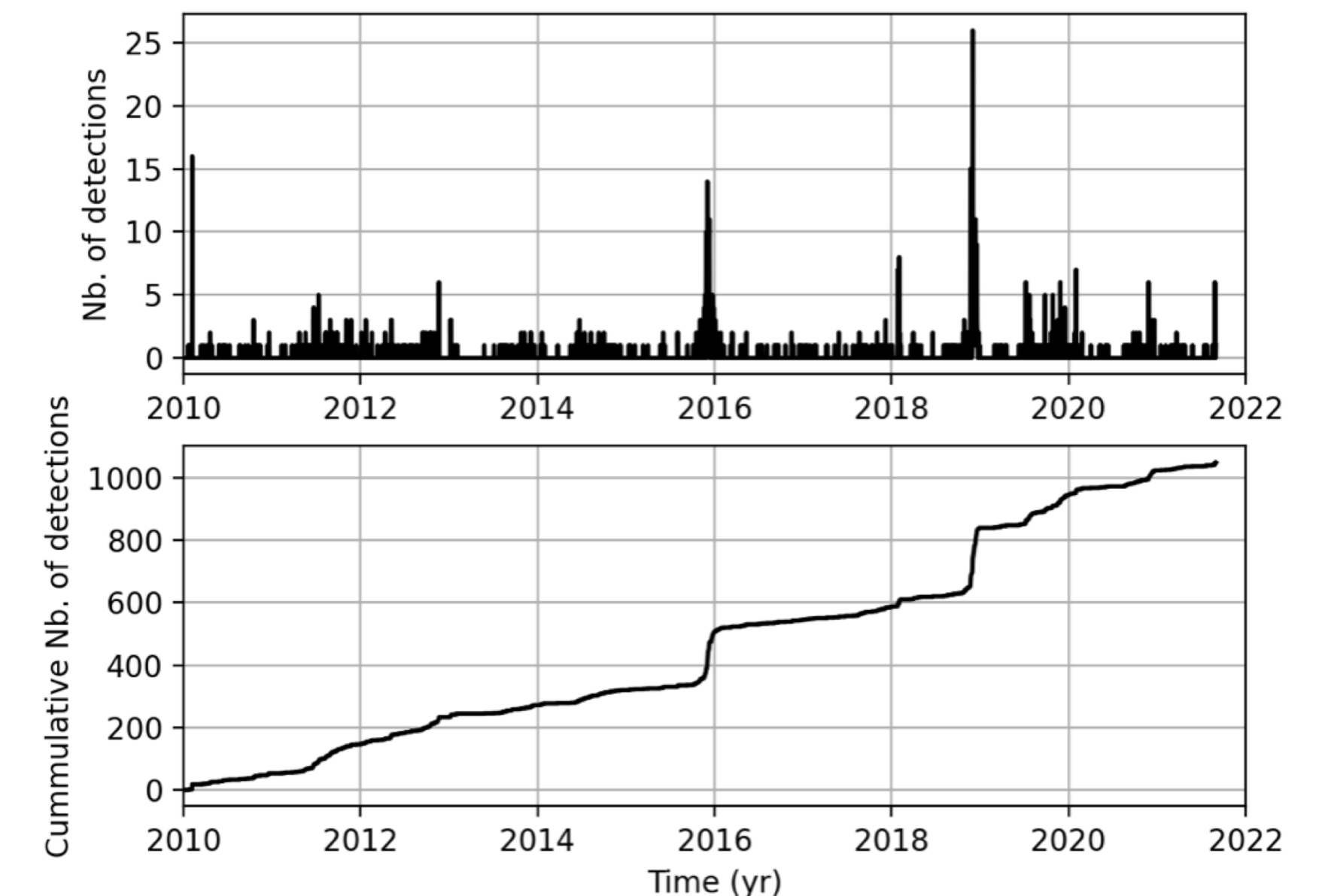
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The Astrolabe is a small ice sheet (16 km x 6 km) located in South-East part of Antarctica in the vicinity of the Dumont D'Urville observatory. In January 2019, a large fissure was detected in the tongue of the ice sheet. We analyzed satellite image time series (Sentinel-2, 10 m spatial resolution) and seismological data to understand the recent dynamics of the glacier.



Detected Calving events Astrolabe glacier 2010-2021



The ice velocity is computed with optical image correlation technique using the MPIC-OPT-ICE service on the the Sentinel-2 archive from February 2017 to September 2021. The seismological data from 2010 to 2021 are analyzed using cross-correlation techniques to detect calving events. The reference signal for the cross-correlation is taken as an event that has been witnessed by observers in the field in January 2019.