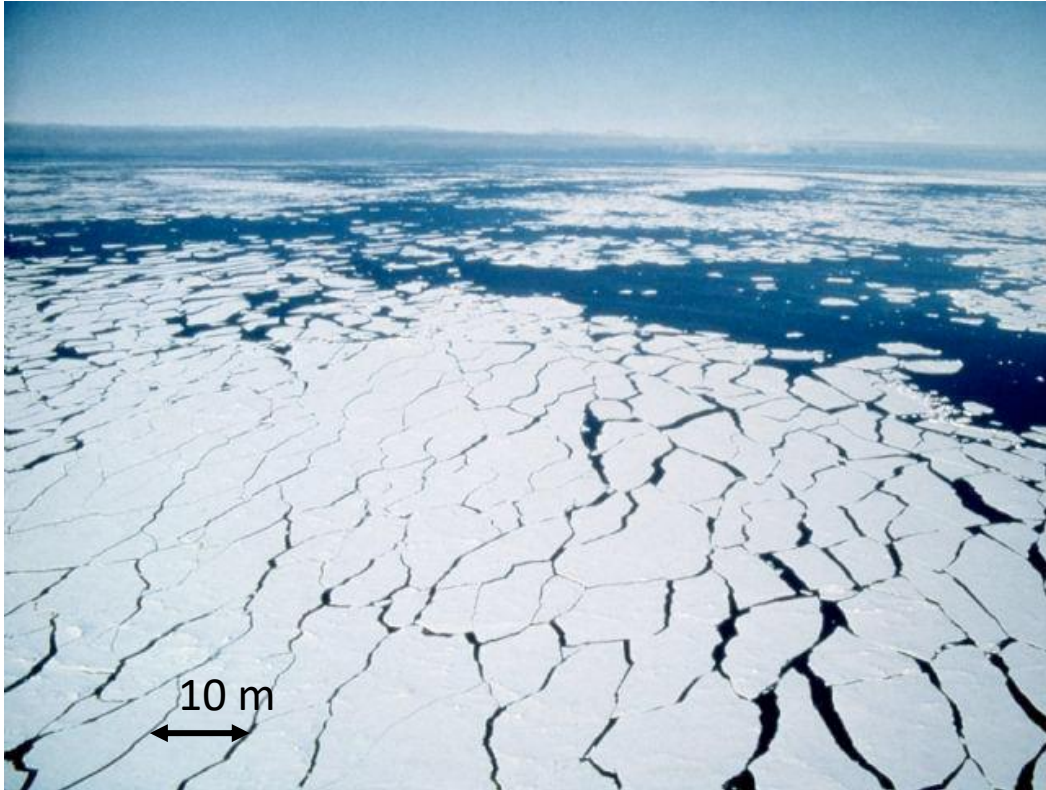


# Aerial observation of the propagation of surface waves in fragmented sea ice

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*Antarctic Marginal Ice Zone (MIZ)  
Pr. A. Baggeroer*



*Breaking of ice by surface waves, Rimouski, Canada  
PMMH Turbots team, (20 February 2024)*

**How do surface waves propagate in an array of fragmented ice floes ?**

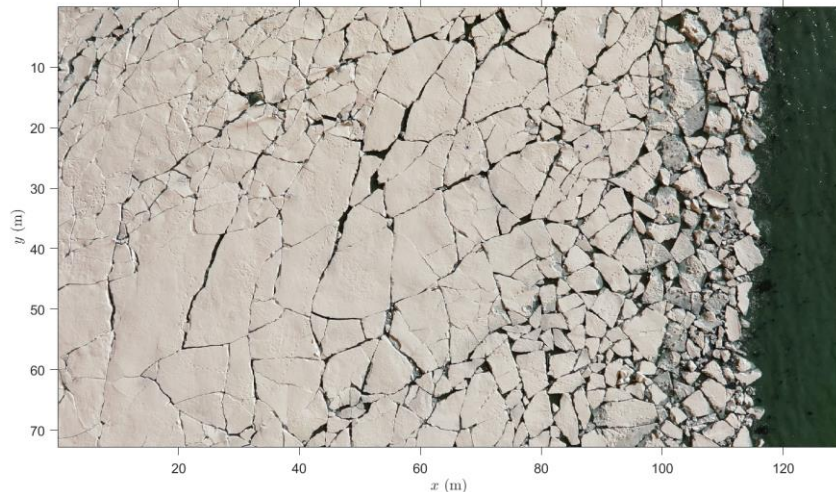
Floe Size Distribution (FSD),  
Spatial distribution,  $h_{ice}$ ,  $\lambda$ ,  $A$

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# A case study : Ha! Ha! Bay, Rimouski, Canada

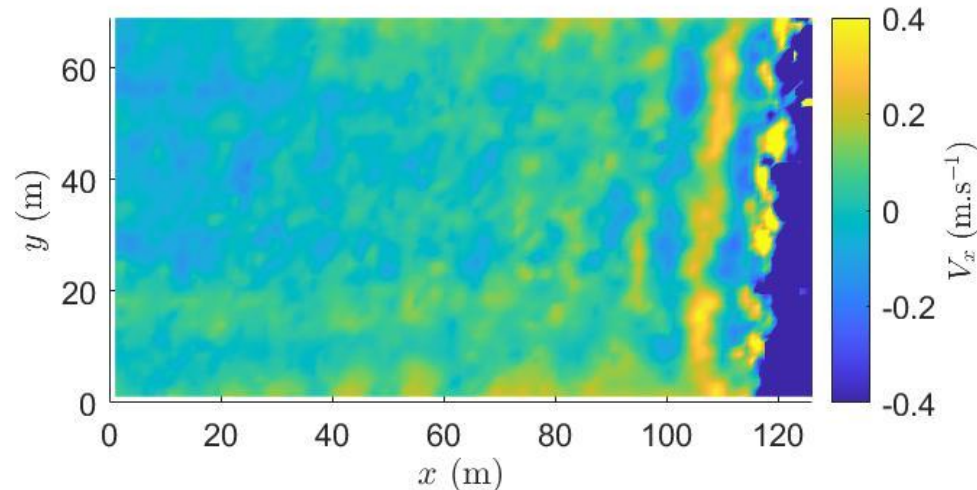


Aerial picture, Ha! Ha! Bay, Saint-Lawrence River, Rimouski, Canada, PMMH Turbots team (10 March 2023), altitude  $h = 100,6$  m

What can we extract from these aerial observations ?

- Digital Image Correlation (DIC) method : Velocity fields
- Waves dispersion relation in the ice covered region
- Attenuation of the different frequencies

Velocity field  $V_x$ ,  $t = 166,7$  s



Demodulated wave field,  $f = 0,326$  Hz

