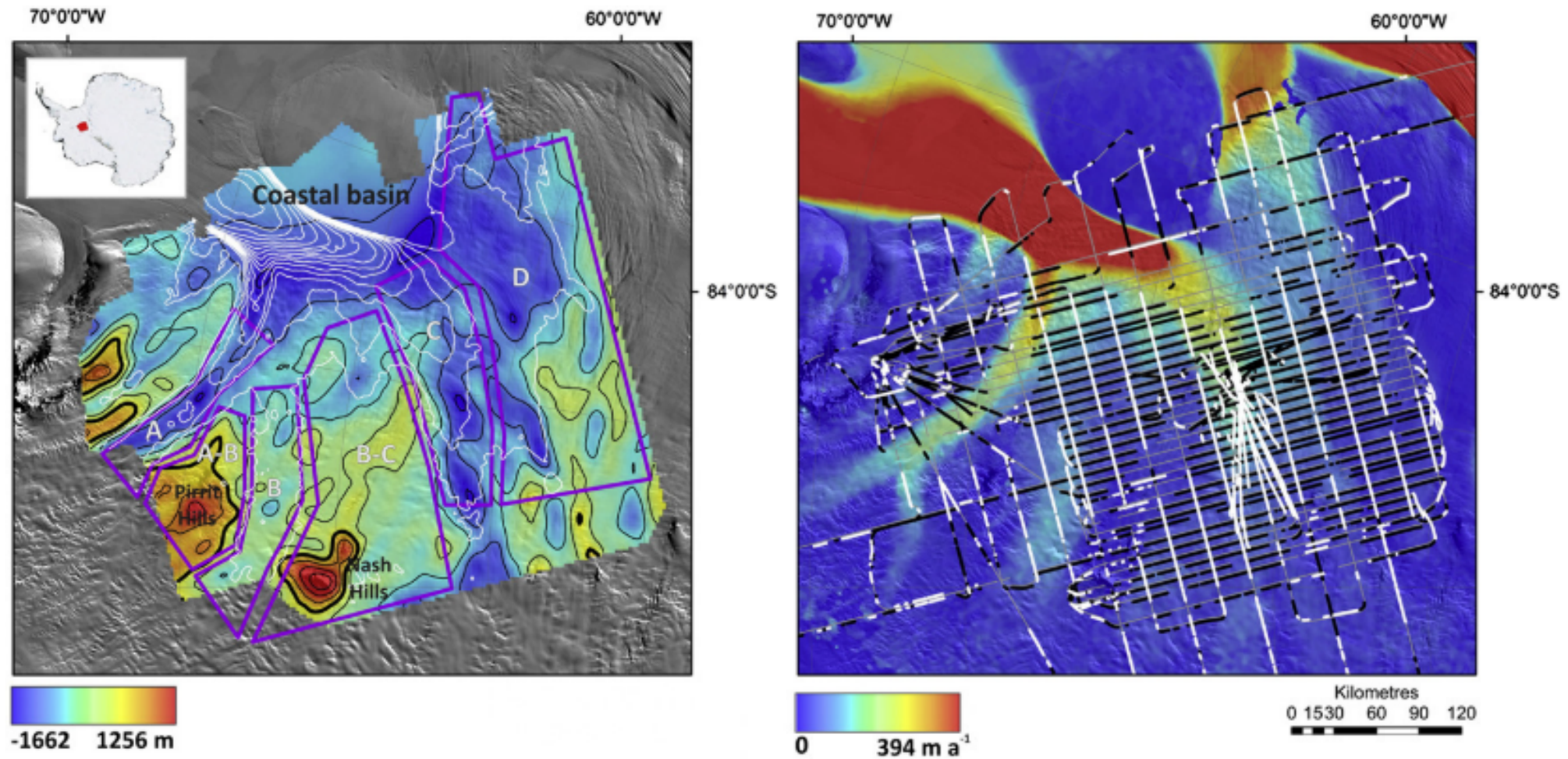


Quantifying bed roughness beneath contemporary and palaeo-ice streams

Fran Falcini

David Rippin, Maarten Krabbendam & Katherine Selby

Rationale

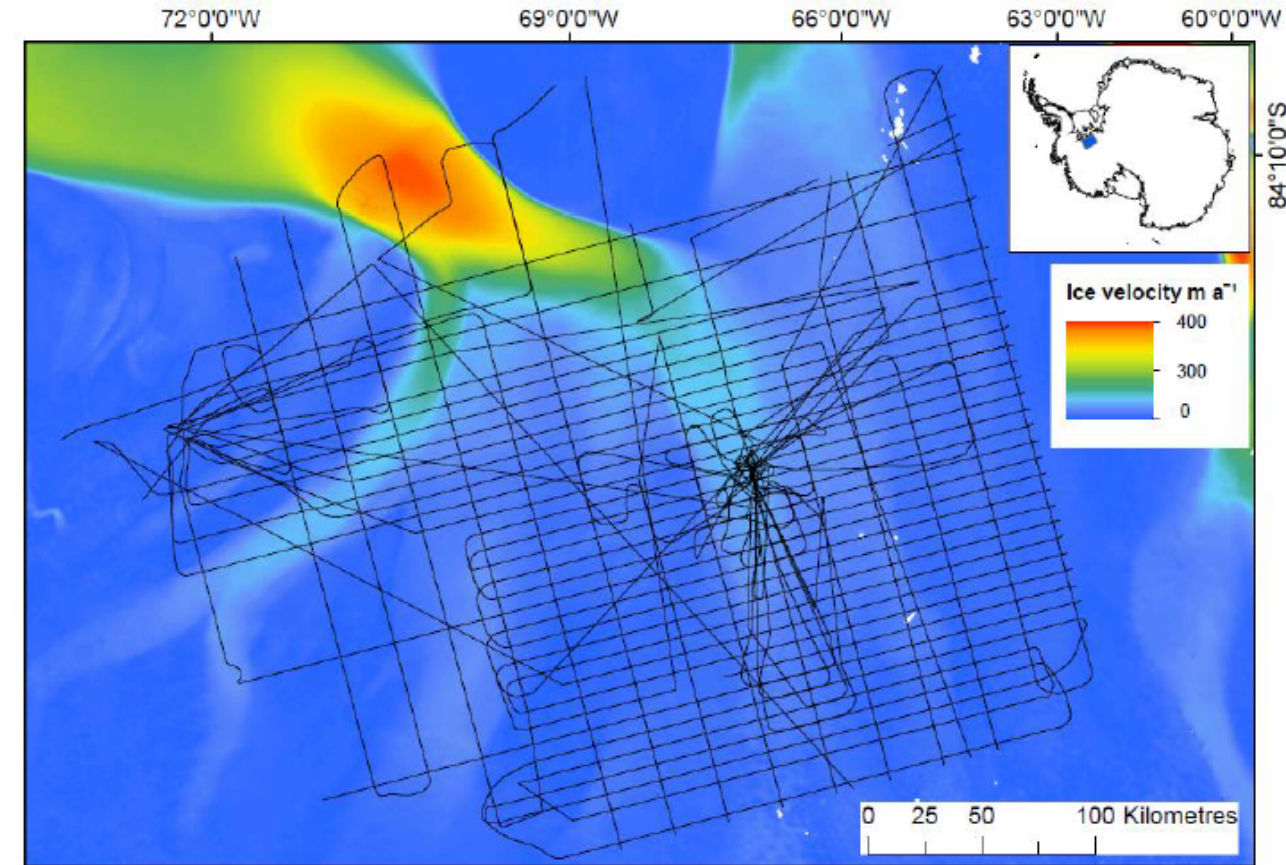
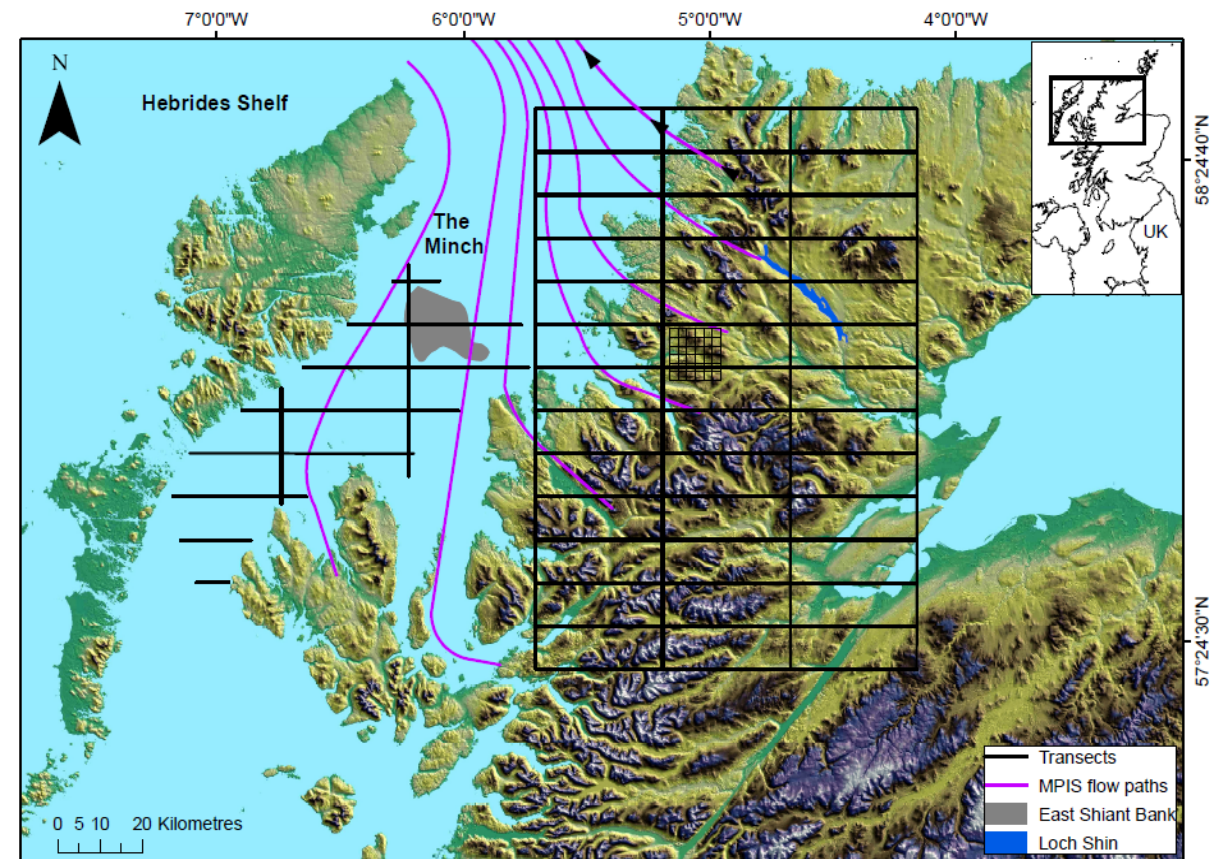


Rationale

Aim: to measure bed roughness of contemporary and palaeo-ice stream beds at the same scale.

1. Explore whether Radio Echo Sounding track spacing is sufficient to capture bed roughness trends.
2. Compare whether the method used to measure bed roughness produces different results (FFT analysis or Standard Deviation).
3. Investigate whether orientation of transects in relation to ice flow direction influences bed-roughness results.

Study sites



(Falcini et al., 2018)

Rationale

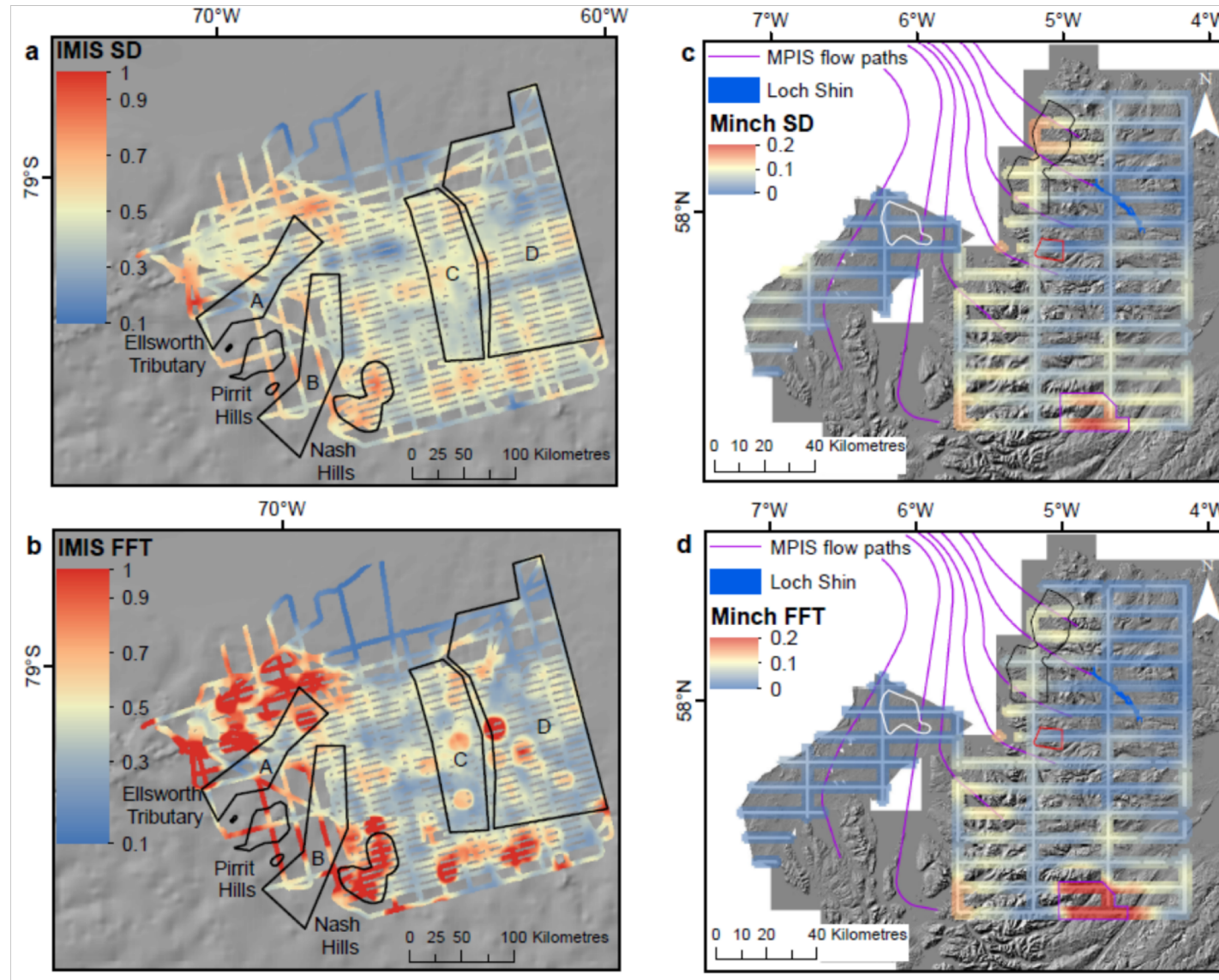
Study sites

Results

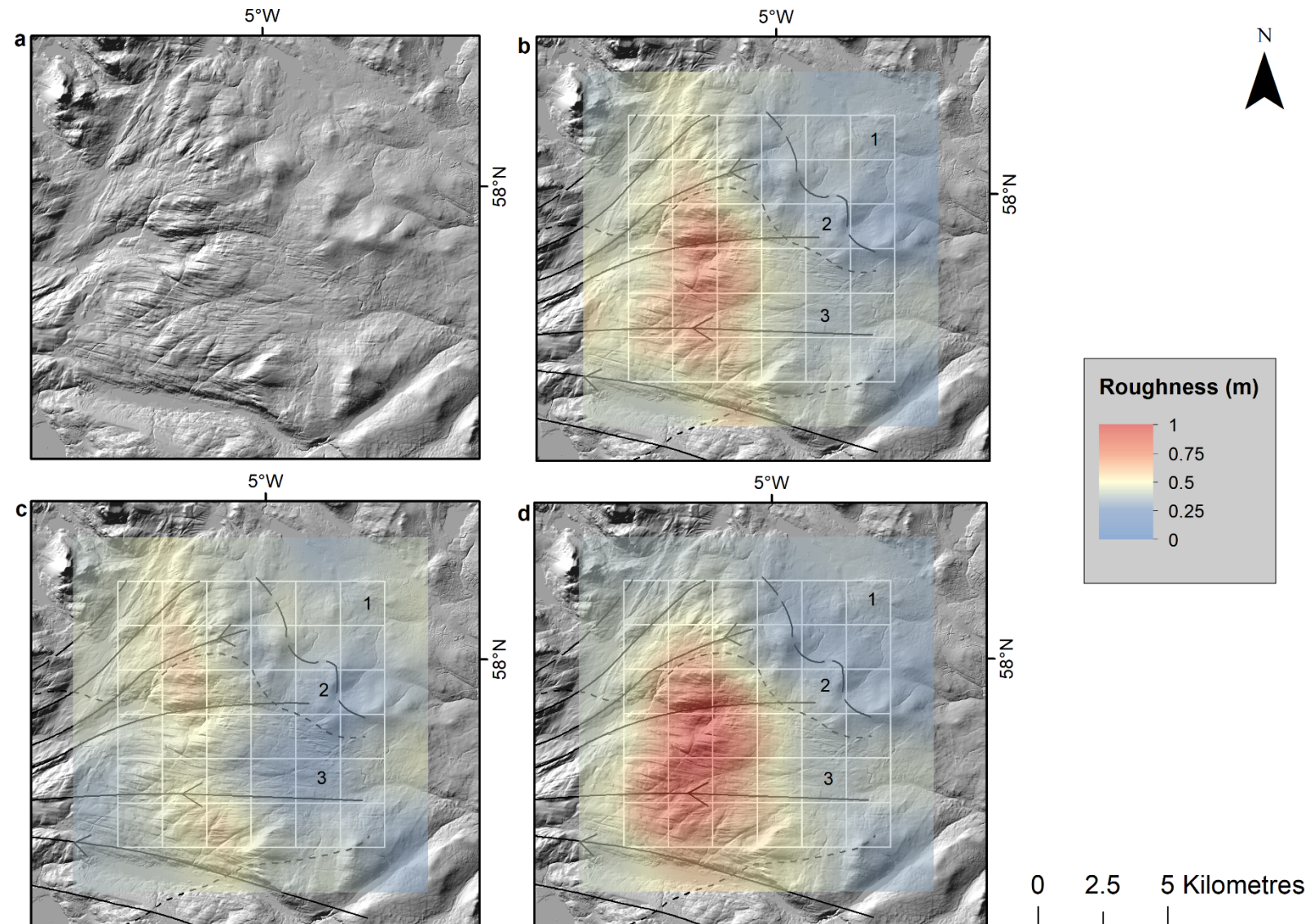
Main findings



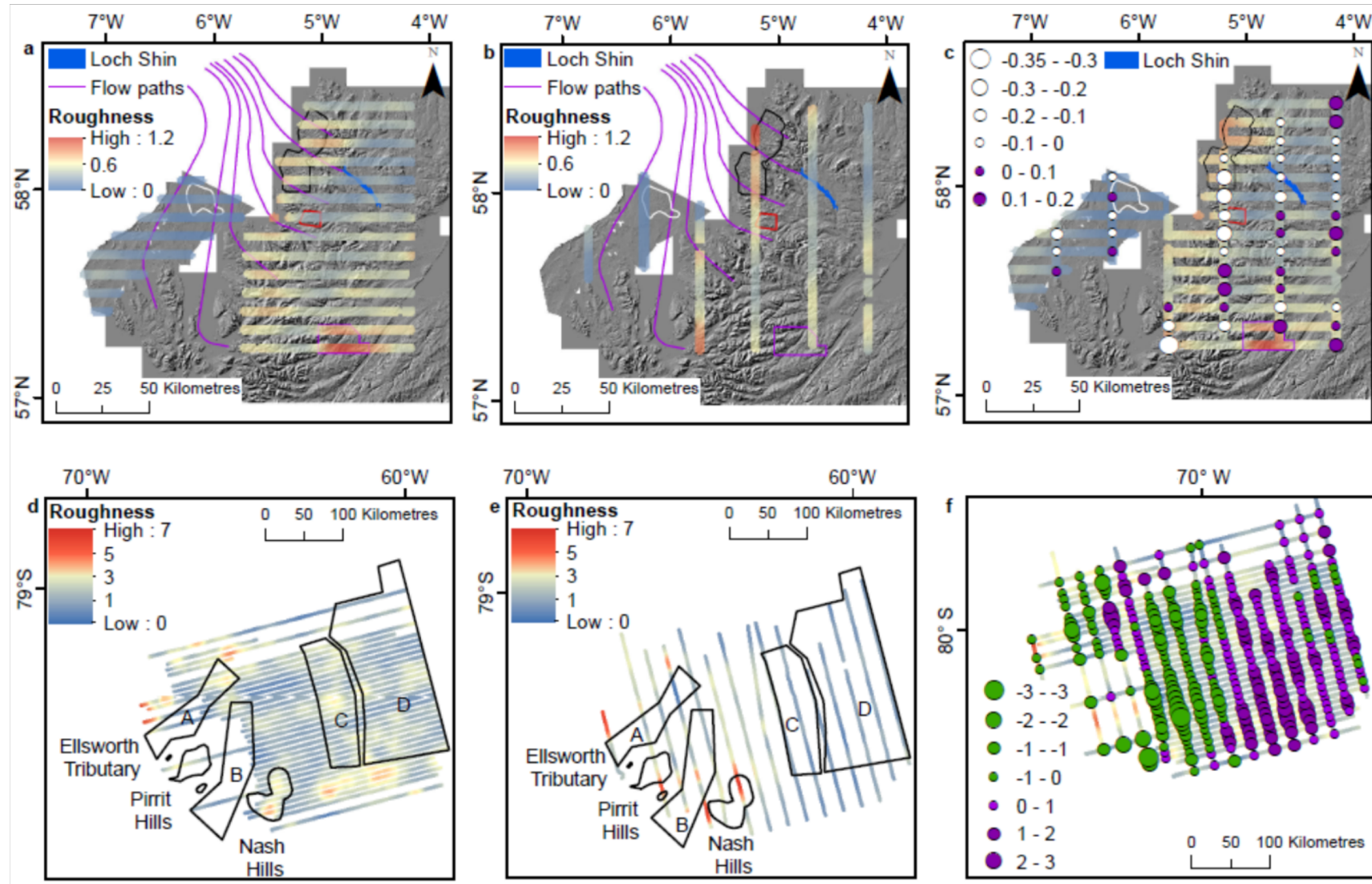
Results



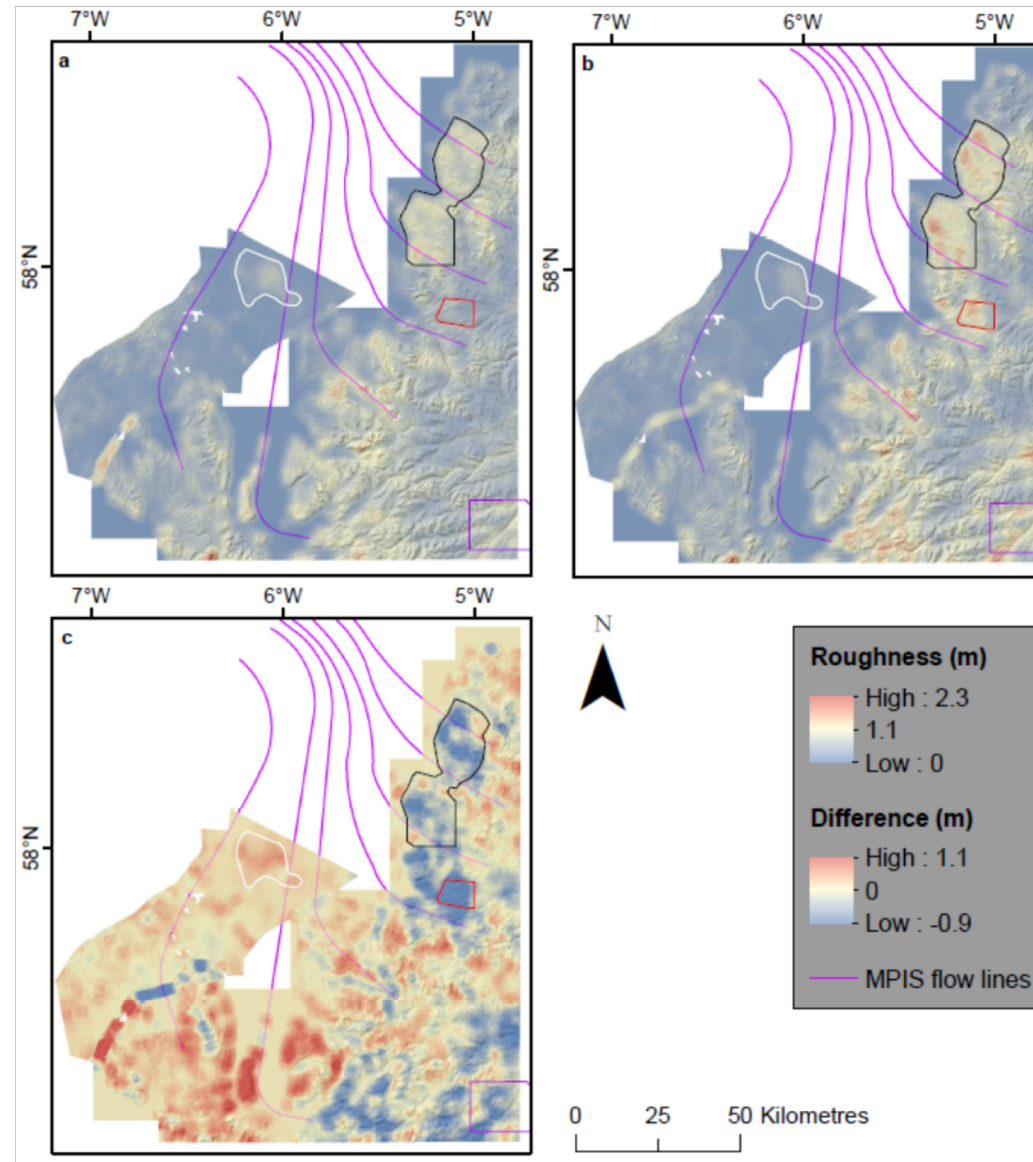
Results



Results



Results



(Falcini et al., 2018)

Rationale

Study sites

Results

Main findings

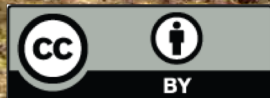


Main findings

- Fast palaeo-ice flow can occur over a rough, hard bed.
- Similar trends in bed roughness values were found using Fast Fourier Transform analysis and standard deviation methods.
- Spacing of RES transects is too wide.
- Transect orientation influences bed roughness measurements.



Any questions?



famf500@york.ac.uk

 @FranFalcini

