

Insight into sticky-spots from passive seismic observations

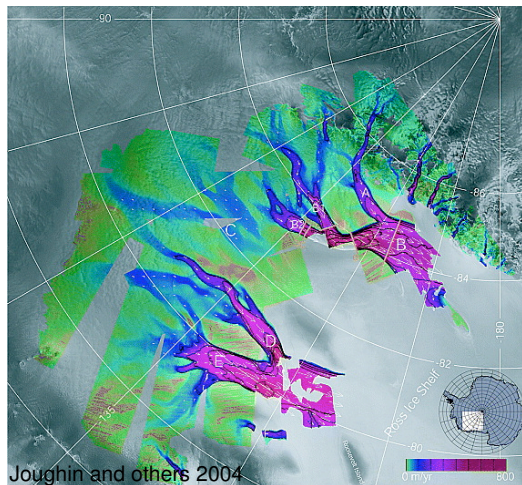
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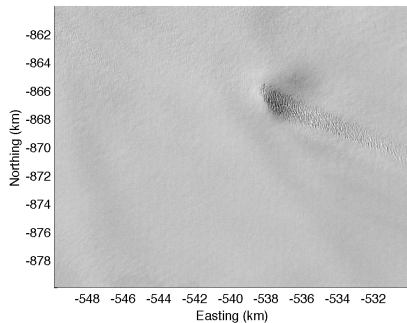
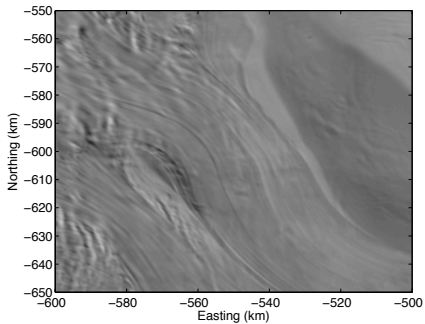
Acknowledgments

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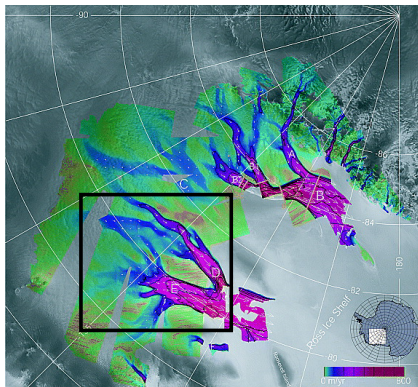
Siple Coast Ice Stream



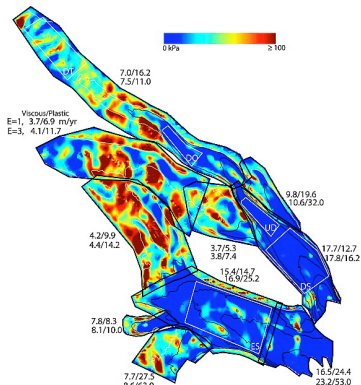
Sticky spots from space



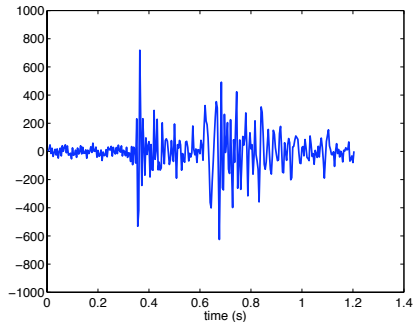
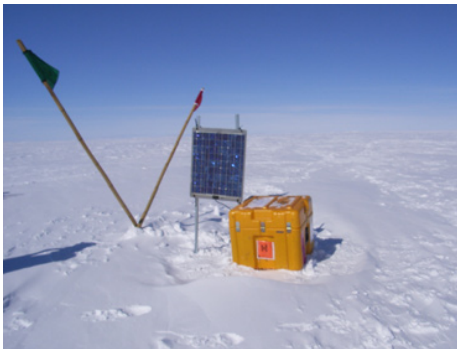
Why don't they go faster?



Joughin and others 2004

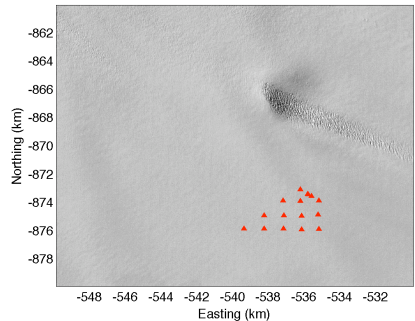
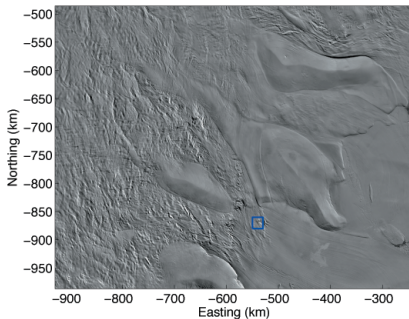


Listen to little Sticky Spots



Small sticky spots, about 10 meters, can inferred from passive seismic observations

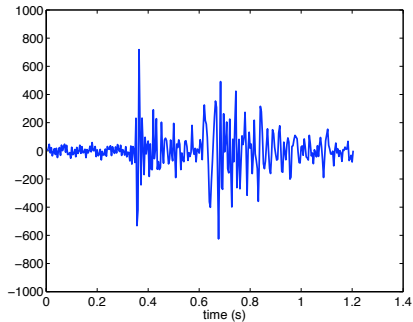
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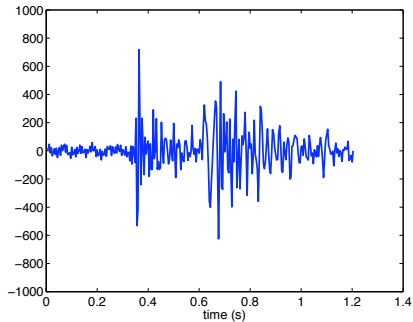
Listening to sticky spots

Typical small icequake

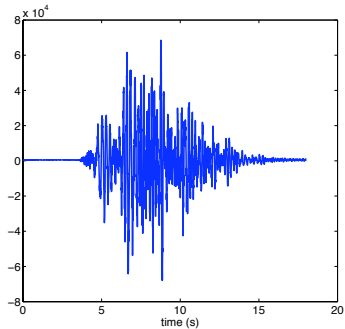


Listening to sticky spots

Typical small icequake

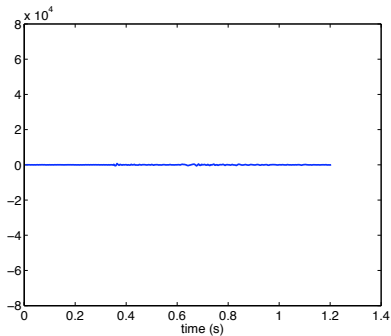


Magnitude 2 icequake!

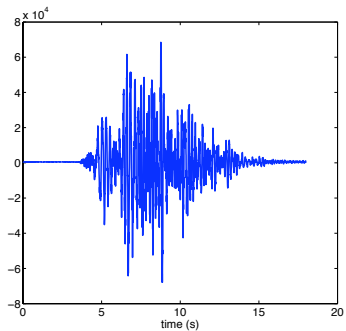


Listening to sticky spots

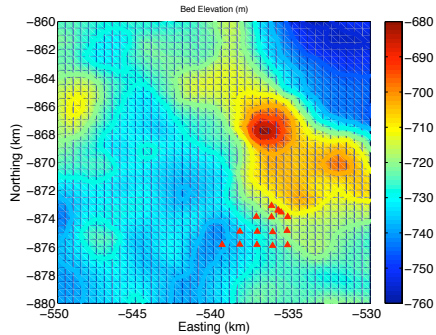
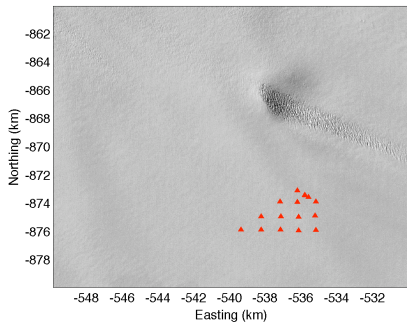
Typical small icequake



Magnitude 2 icequake!

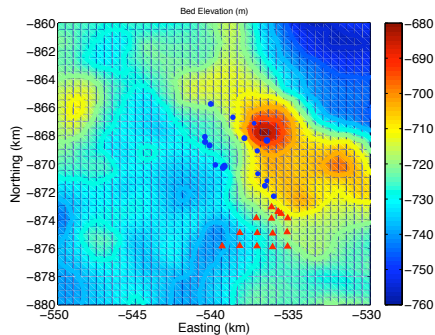
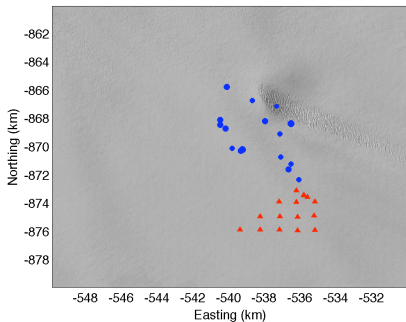


Locating large icequakes

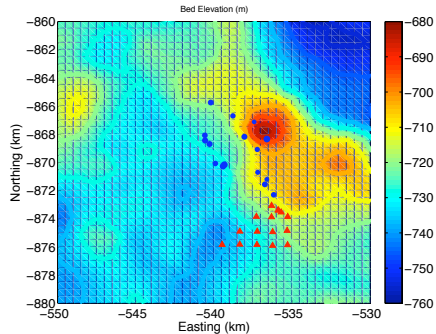
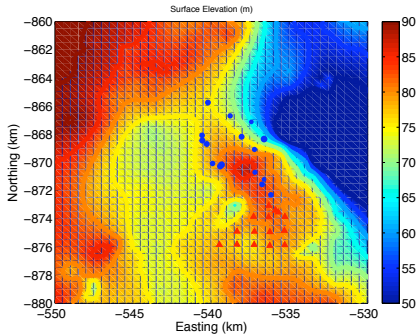


Locating large icequakes

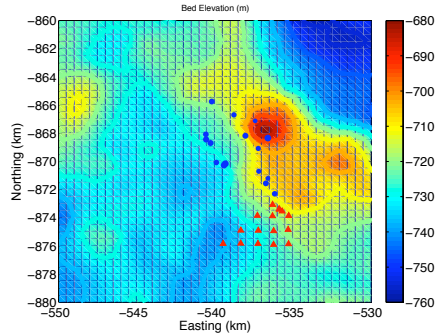
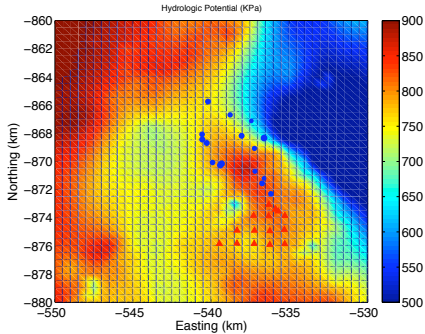
XY position well constrained, depth is shallow (not tectonic)



Locating large icequakes



Locating large icequakes



- Single icequakes can results in relatively large stress drops
- Sticky spots resulting from surface bumps can be as sticky as bedrock highs