Nature or Nurture? Rift Generation(s) at the north east front of the Ross Ice Shelf

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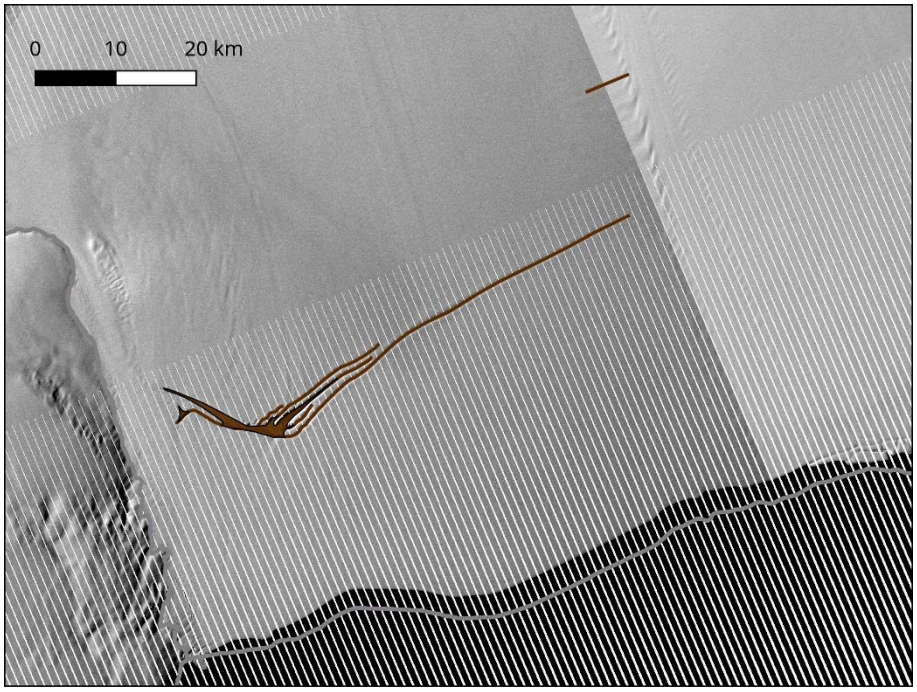
Supervisors: Prof Christina Hulbe, School of Surveying, Prof David Prior and Assoc. Prof Andrew Gorman, Department of Geology



Abstract: Understanding the conditions that drive ice shelf rift geometry and propagation is critical to understanding contemporary change in Antarctic systems. Rifts become the planes along which tabular icebergs calve and thus play an important role in ice shelf mass balance and response to climate change.

We apply linear elastic fracture mechanics (LEFM) and use an ice shelf model to investigate a family of rifts at the front of the Ross Ice Shelf, between Roosevelt Island and the Shirase Coast. This is an ideal section of the ice shelf for our study because stress conditions are straightforward and spatial variation in ice properties appears to be relatively straightforward as well. The propagation of two generations of rifts is recorded in images collected between 1986 and 2017 by Landsat 4, 7, and 8. Rifts originating from very different spatial circumstances are observed to develop into similar near-front geometries because their geometries are governed by the same far-field stresses.

12:00 noon, Thursday, 19 July 2018
L1 Lecture Theatre
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Agent-Based Movement Modelling

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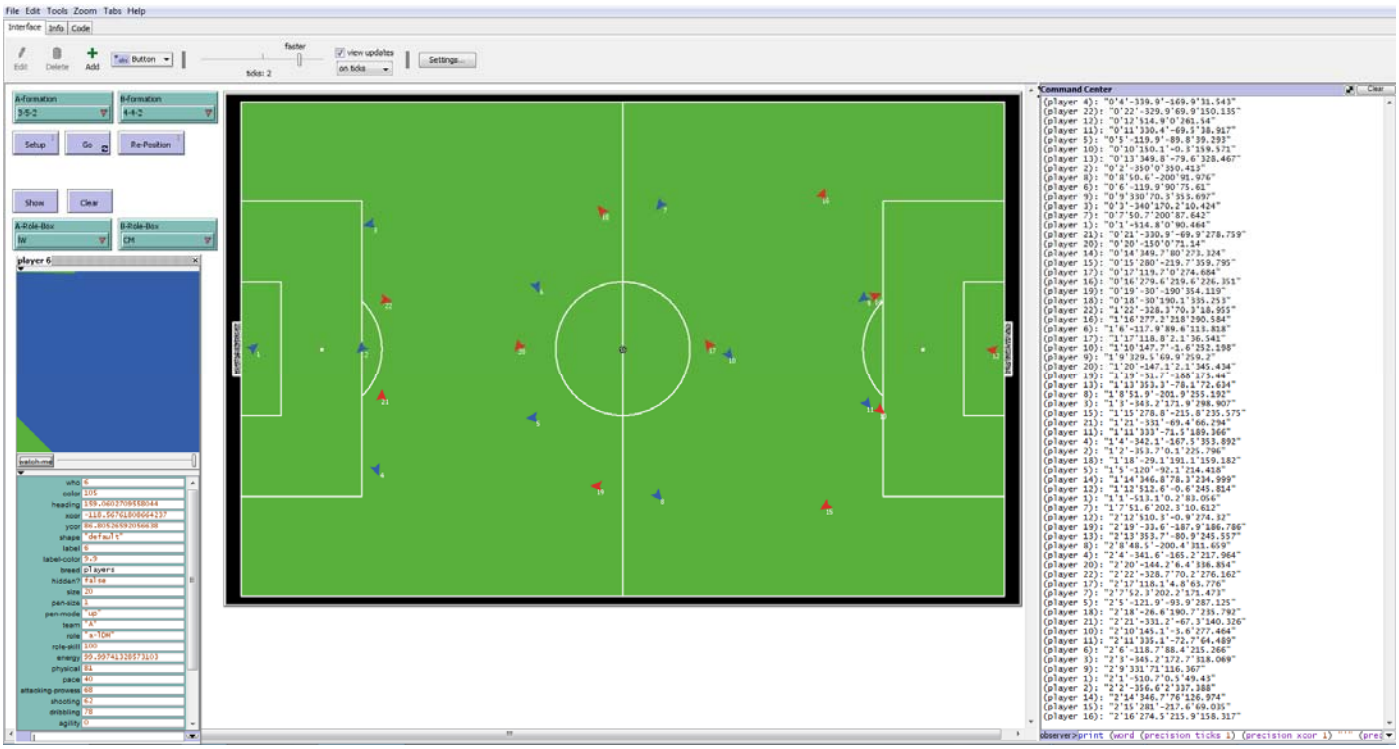

Abstract: The growing ability to track, record, and store the moving objects over time have created high-resolution space-time data that has enabled new insights into movement processes. The process of moving is a decision-based activity influenced by objects' internal characteristics, environmental factors, and relation to other moving objects. Hence, breaking through the movement decisions needs to consider the attributes of the objects, as well as their absolute and relative spatiotemporal position. Agent-Based Modelling facilitates simulating (the third way of doing science) movement decisions making. We have simulated Football players' movement decisions in NetLogo.

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