'The power of where'

DRIVES NEW ZEALAND'S SUCCESS

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Using Synthetic Aperture Radar to Maintain the National Reference Frame

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Geodetic Surveyor

InSAR and GGOS

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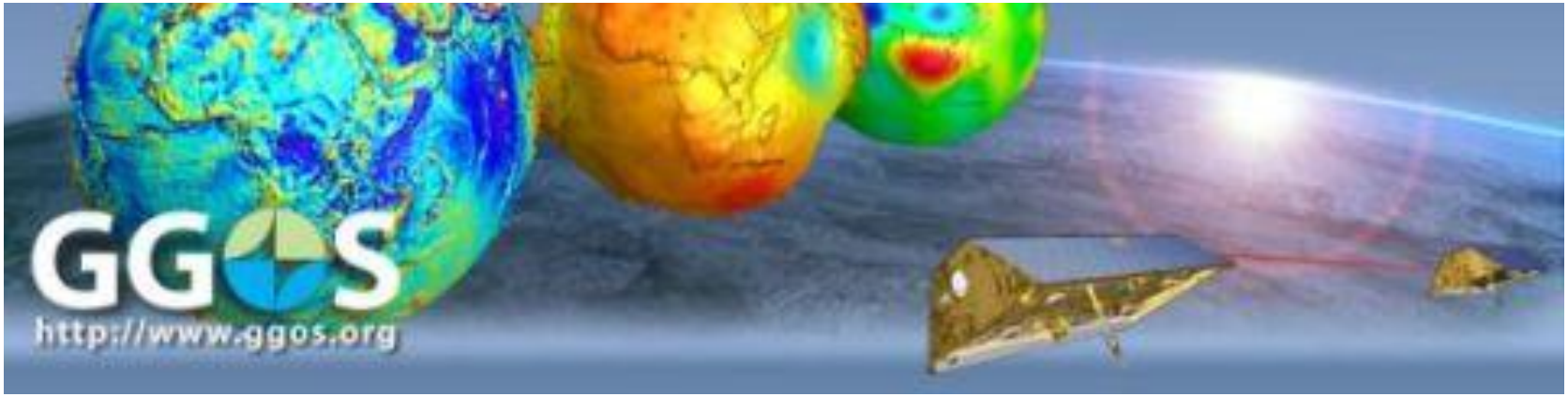
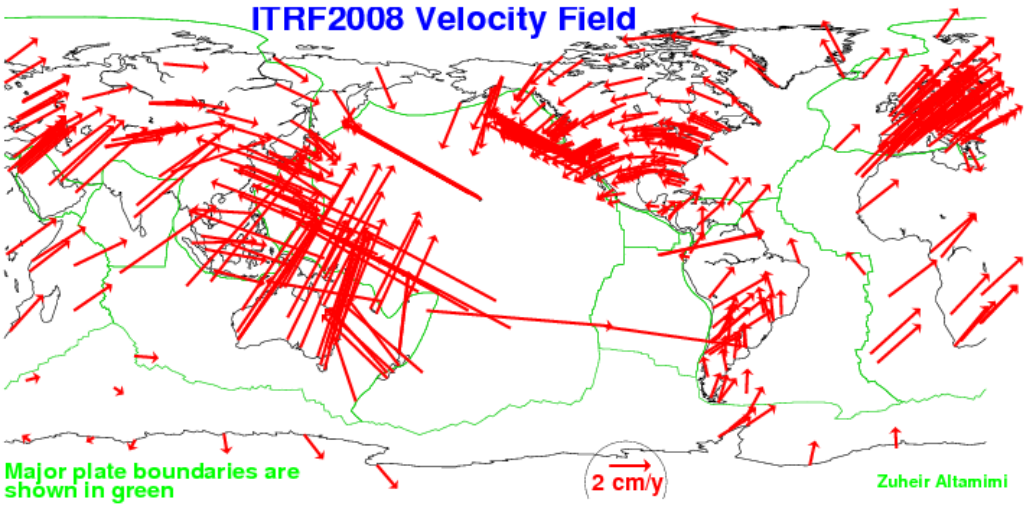
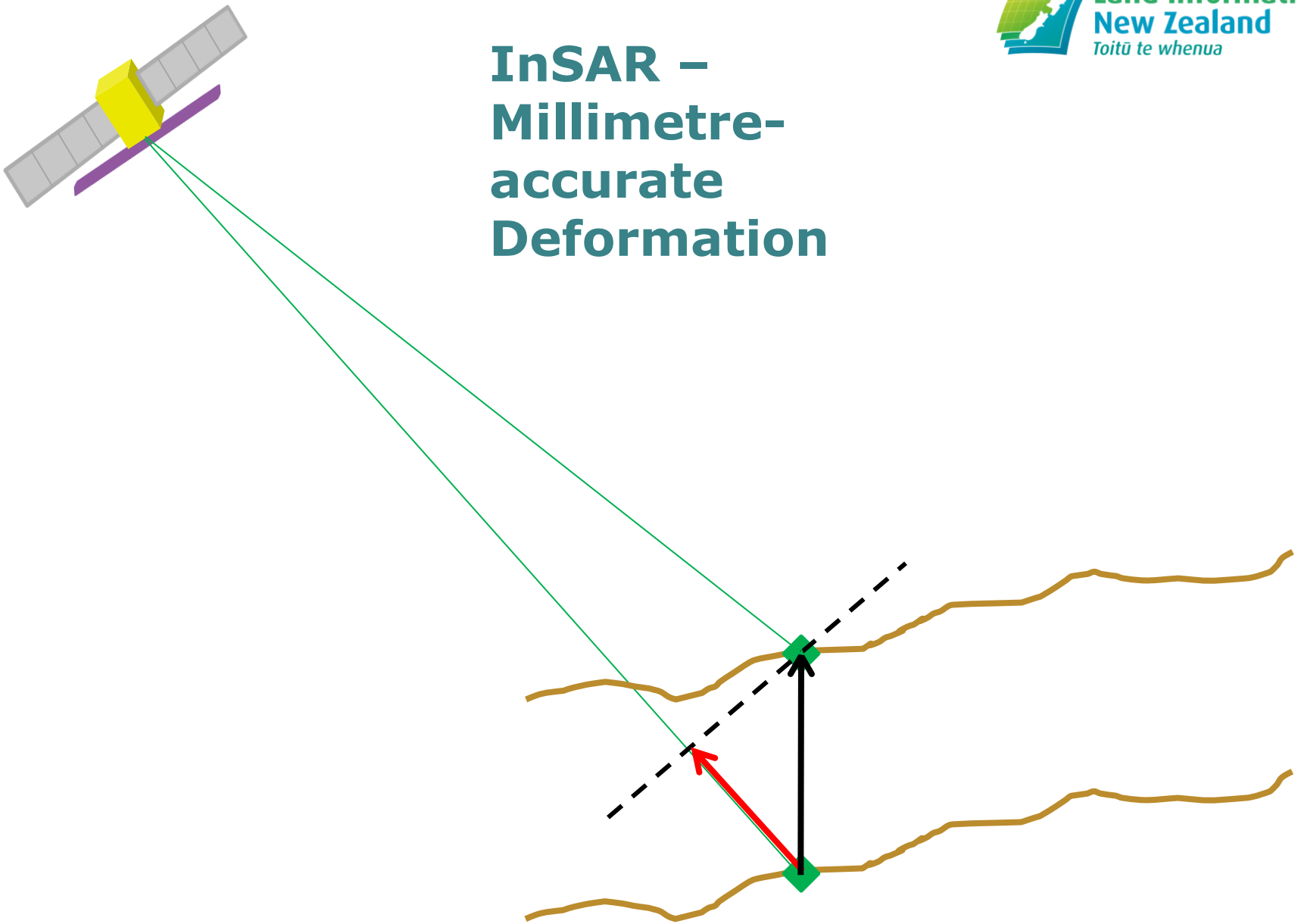
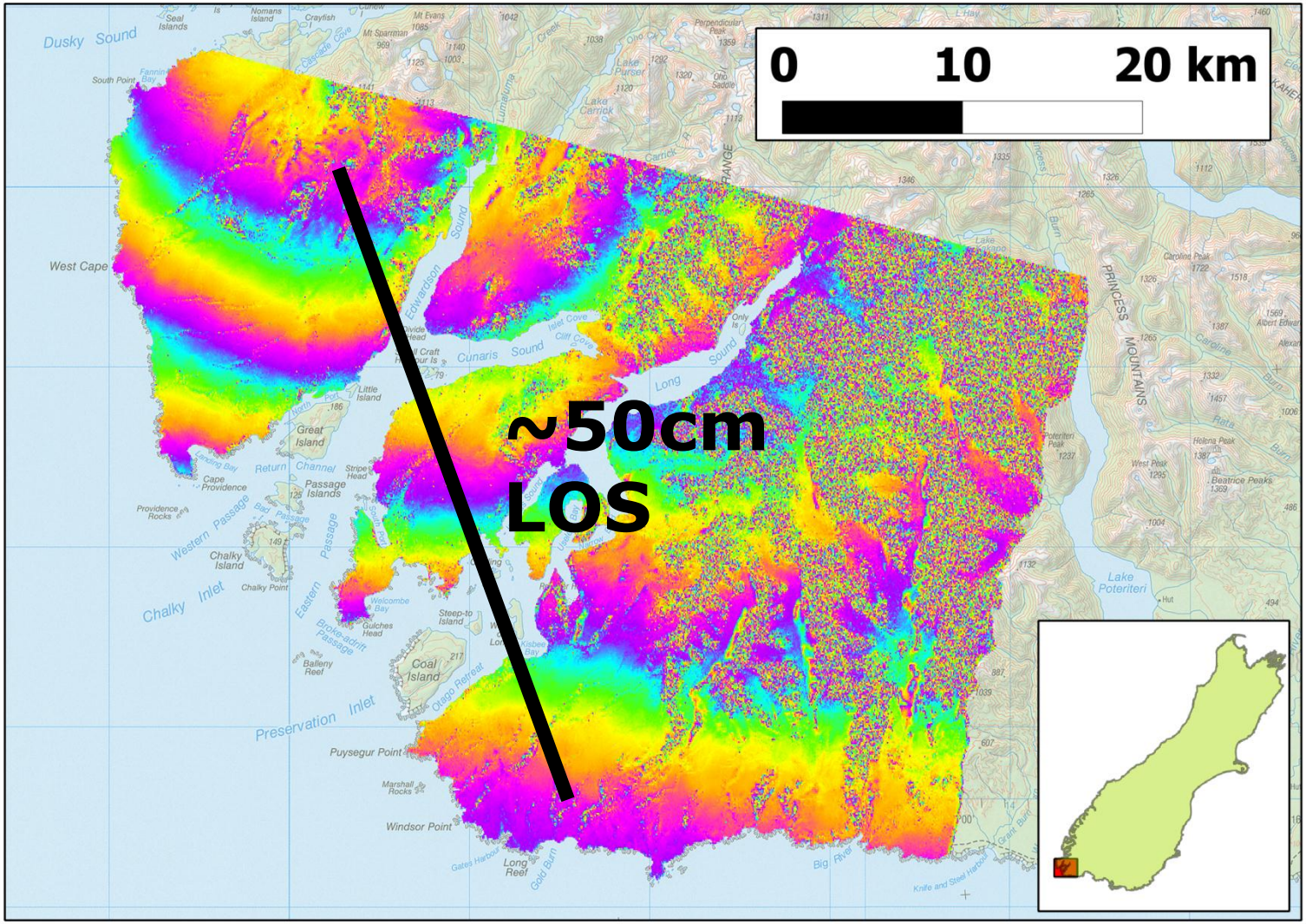




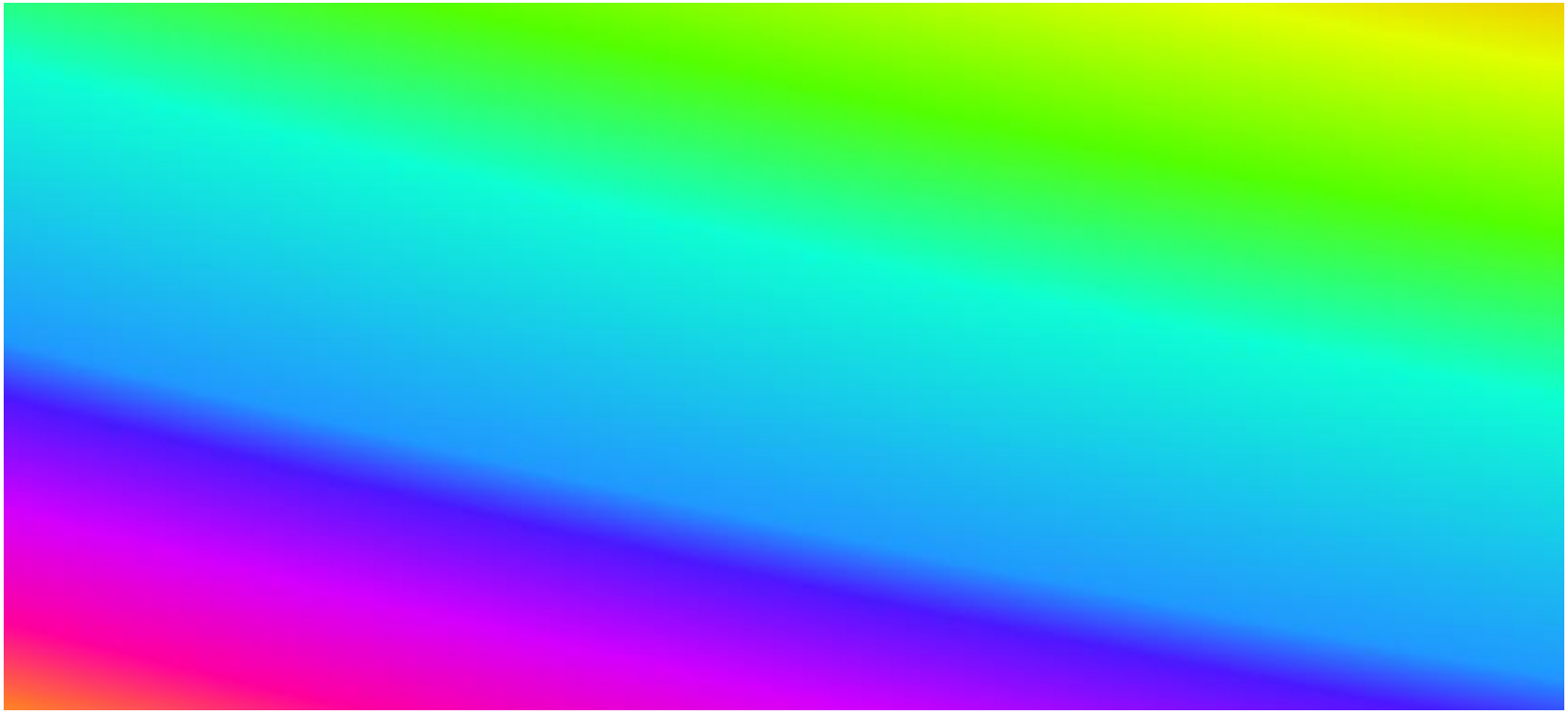
InSAR – Millimetre-accurate Deformation



InSAR – Satellite Line of Sight Measurements



Heading change across image



~ 0.1 degrees over 100km

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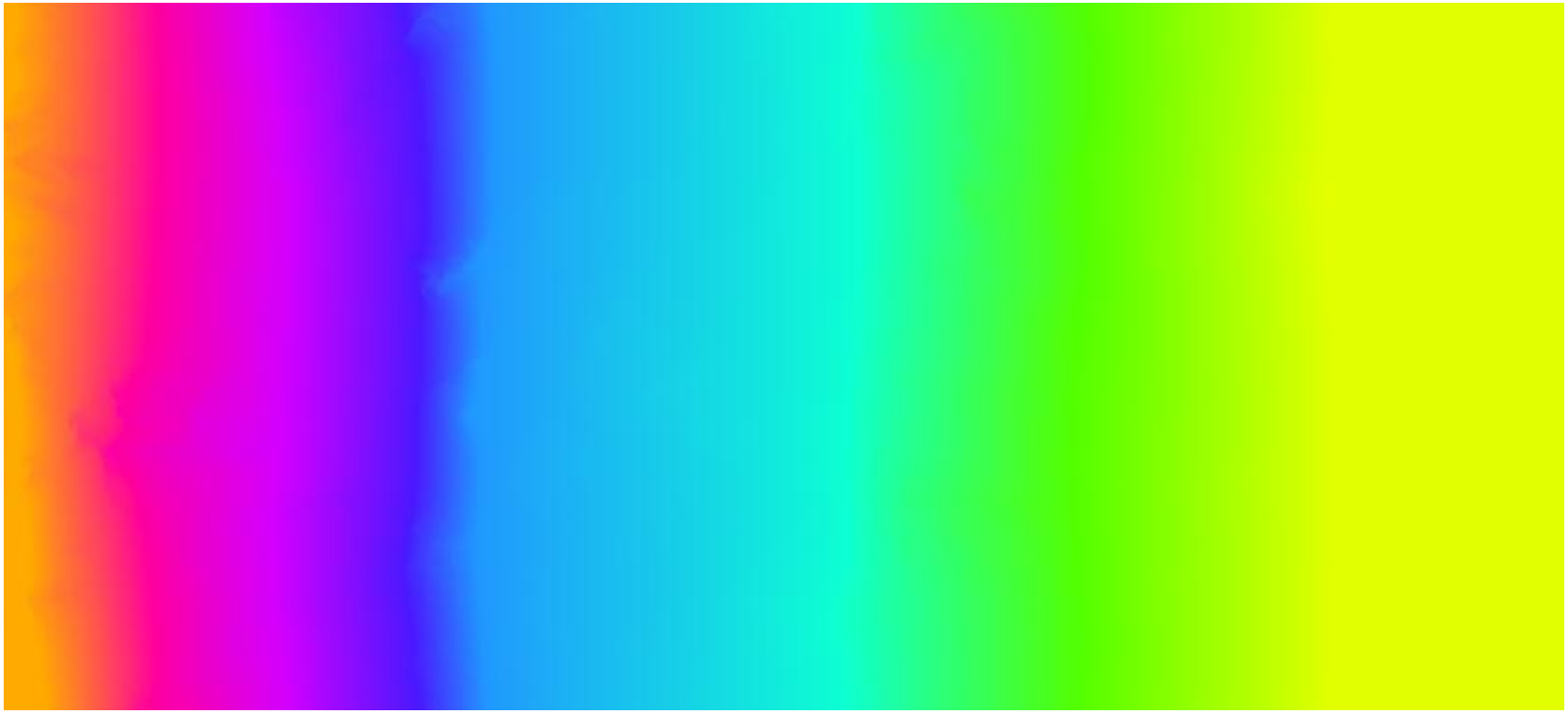
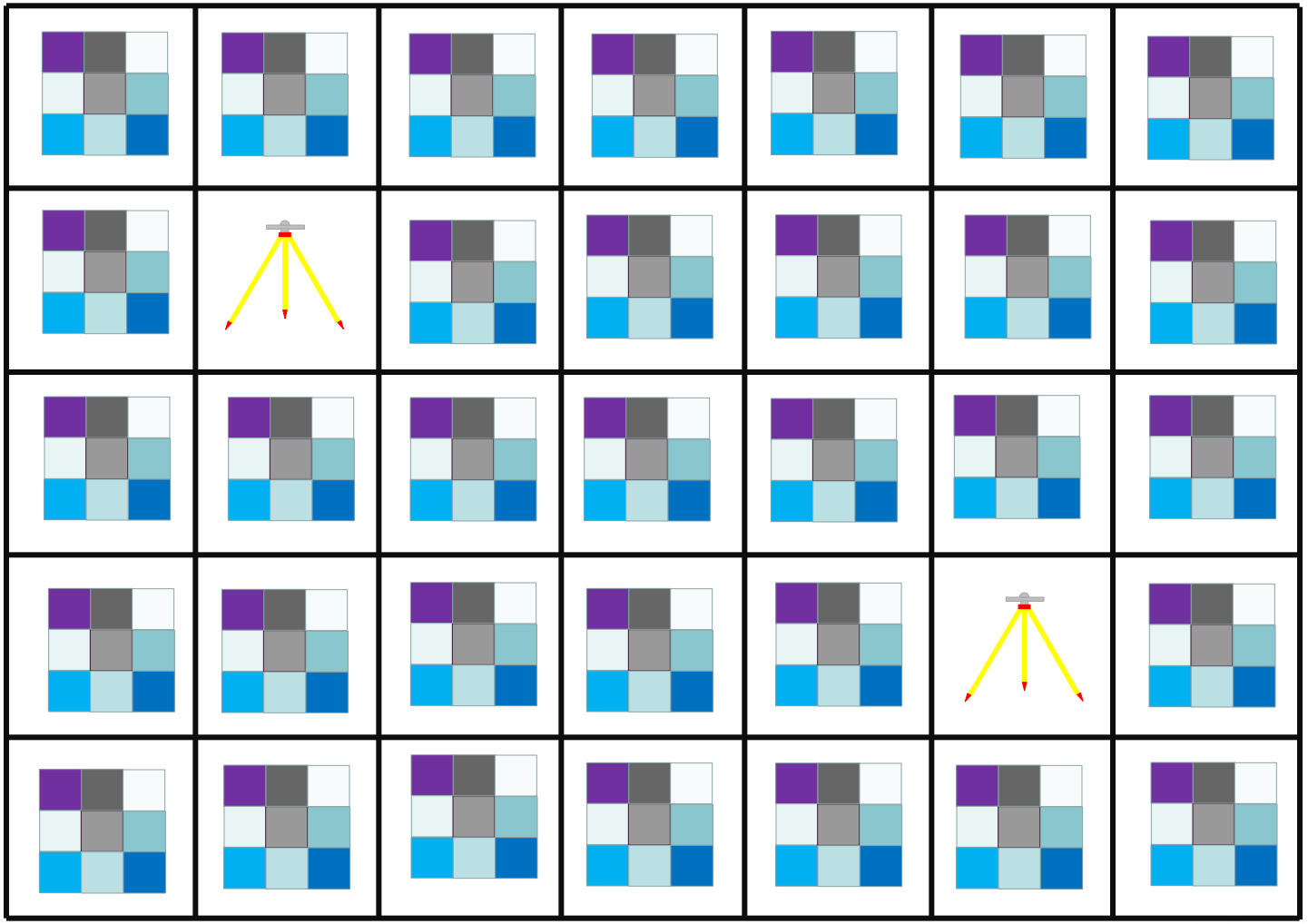
Incidence angle change across image

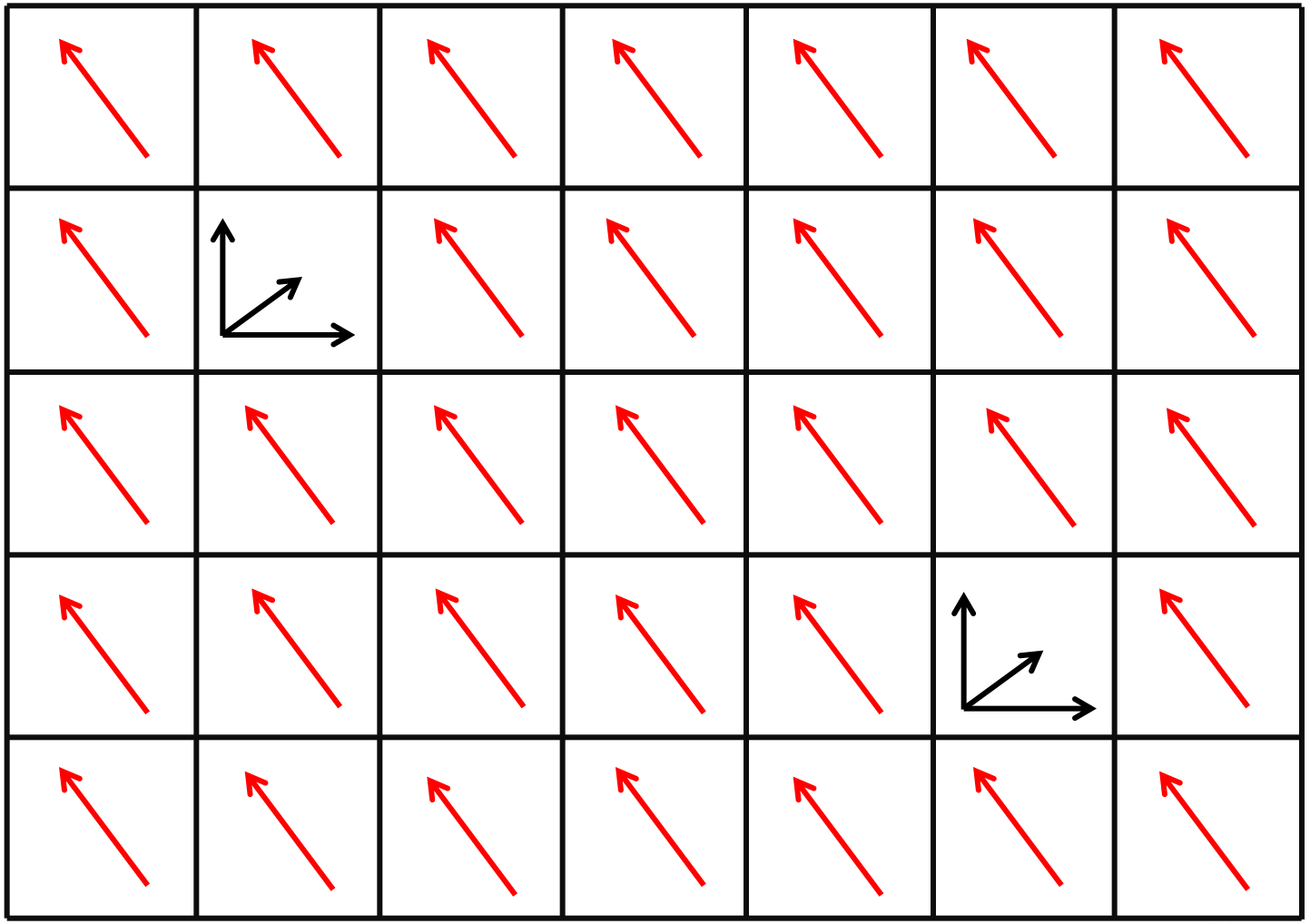


~ 6 degrees over 100km

Combining Techniques to Maximise Spatial Resolution



Combining Techniques to Maximise Spatial Resolution



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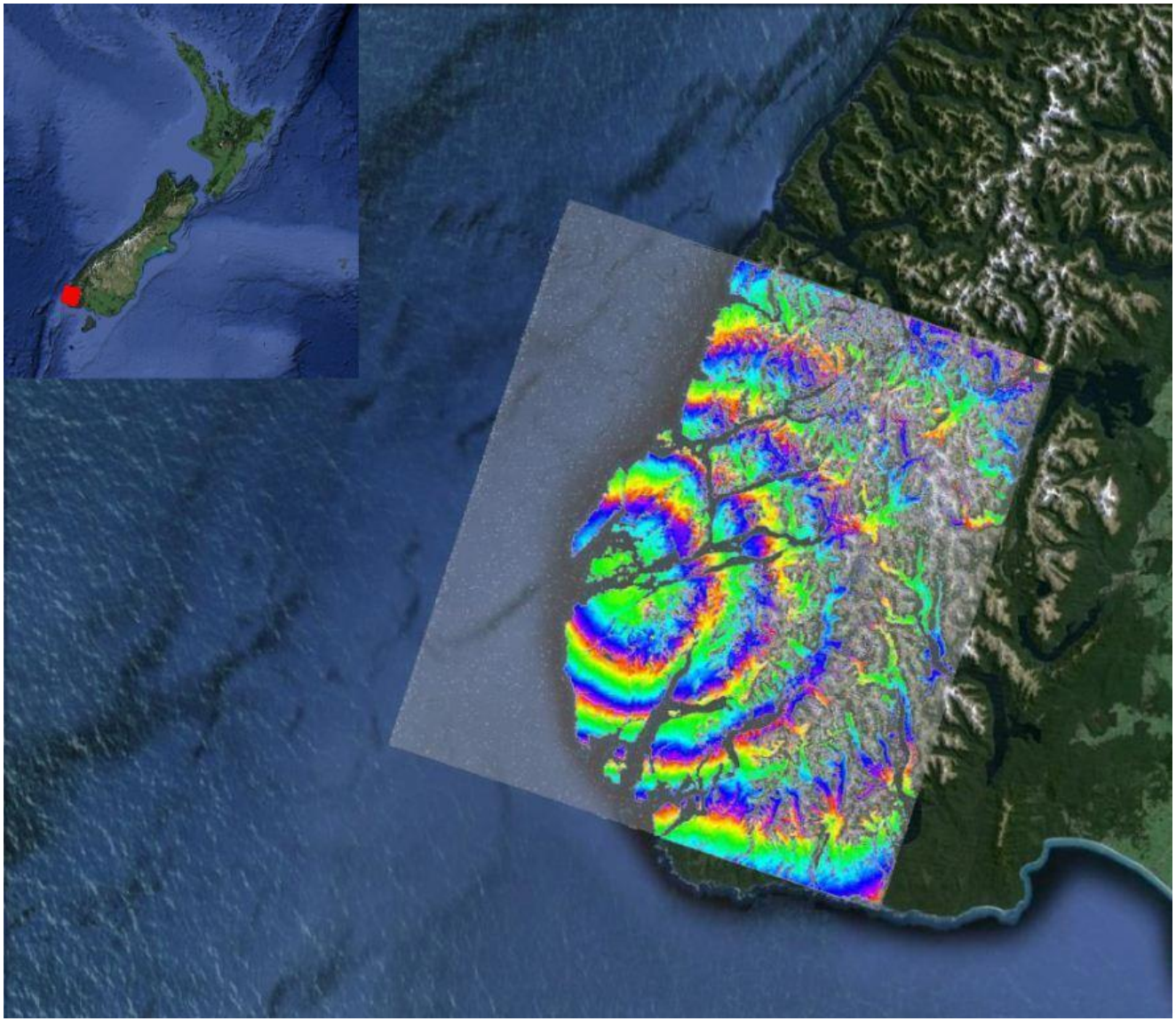
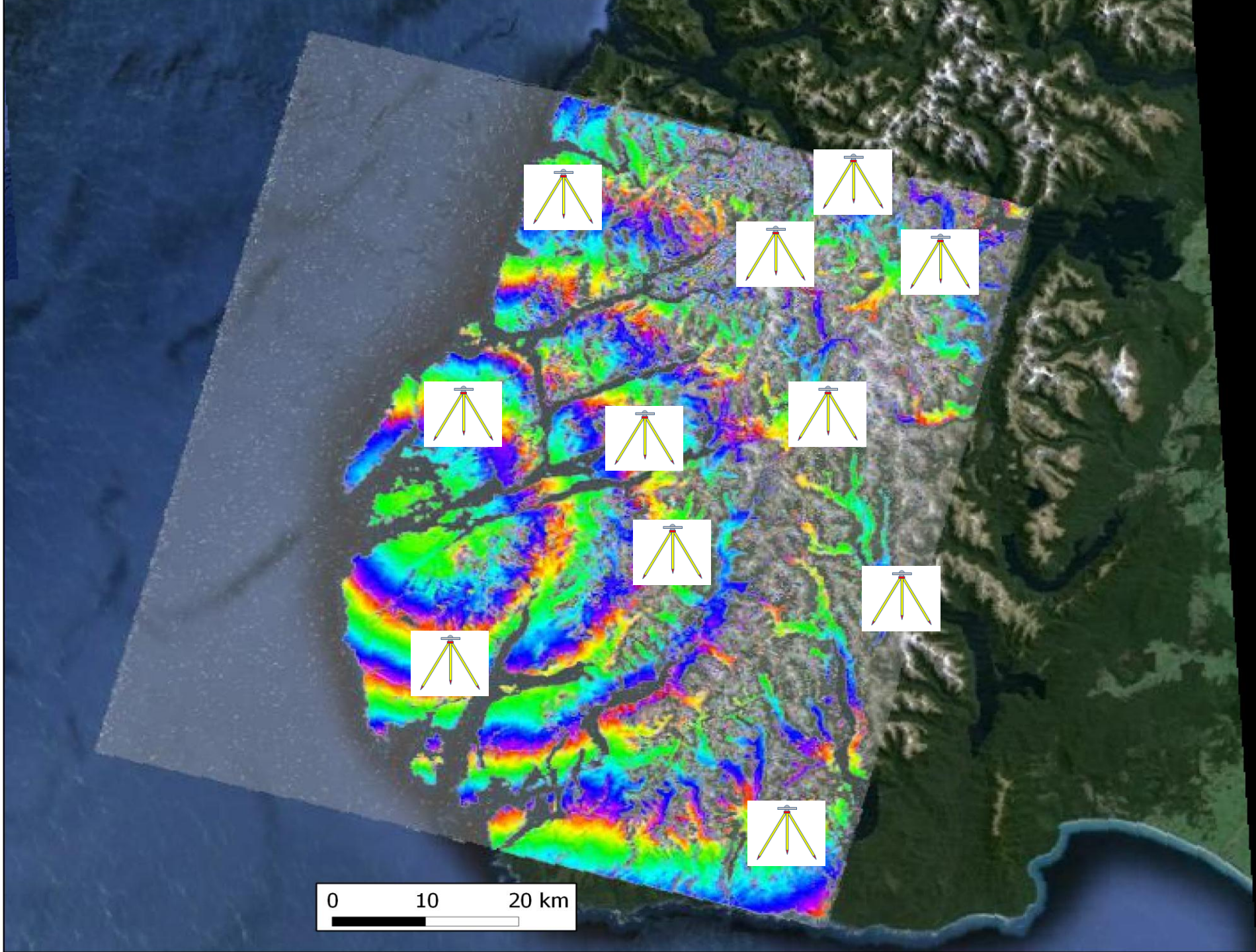
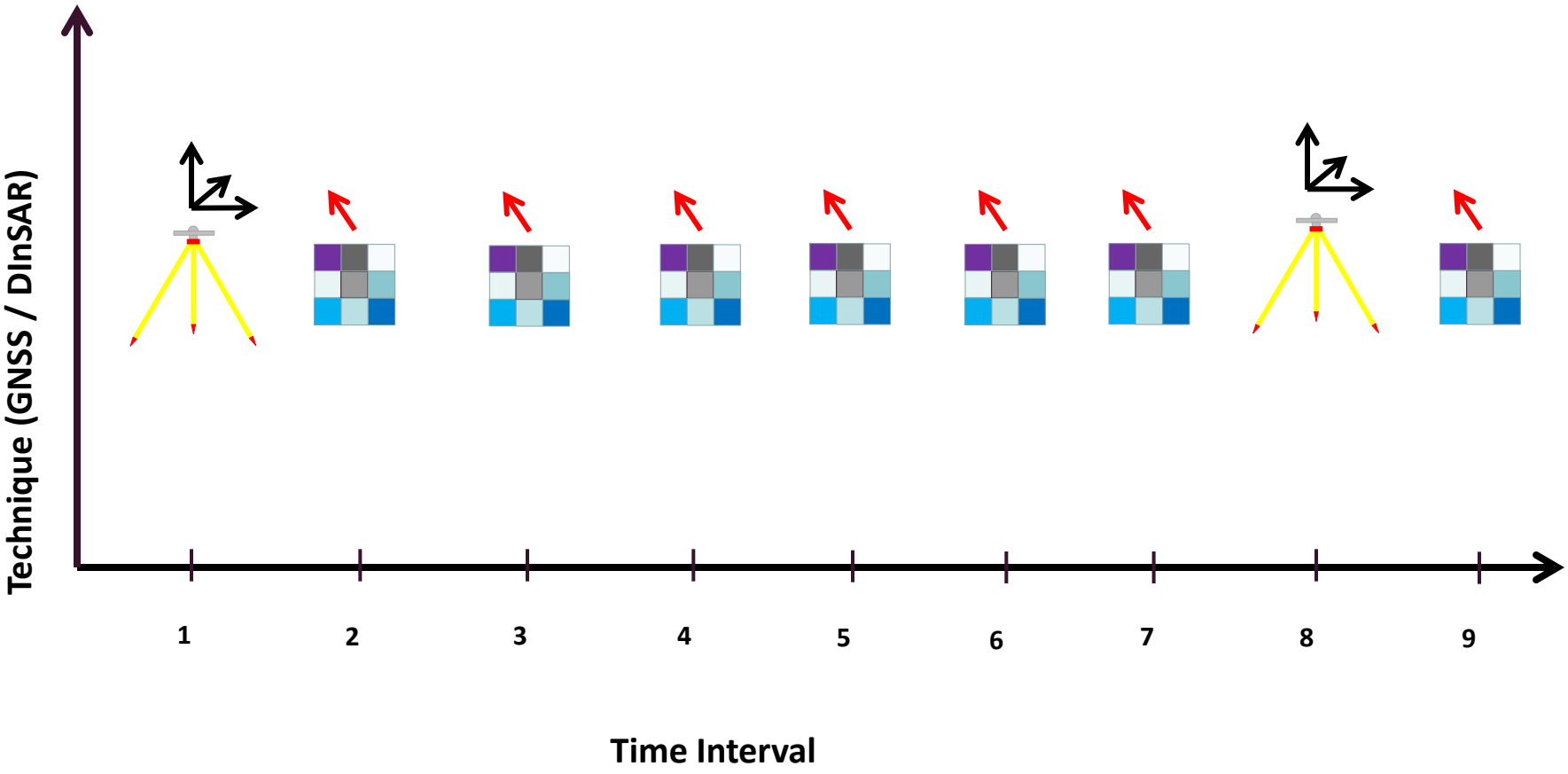
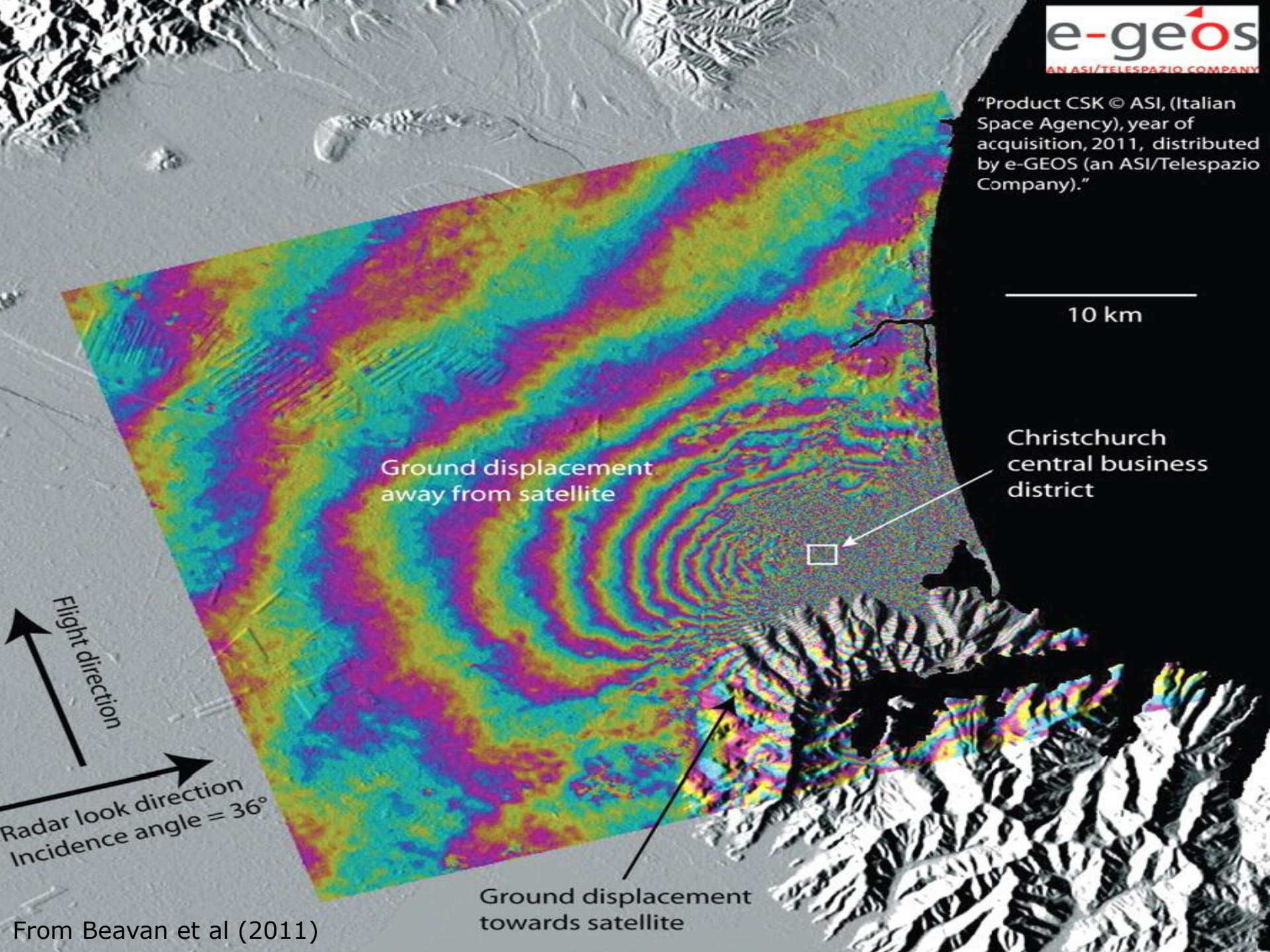
InSAR – Dense Coverage




0
10
20 km

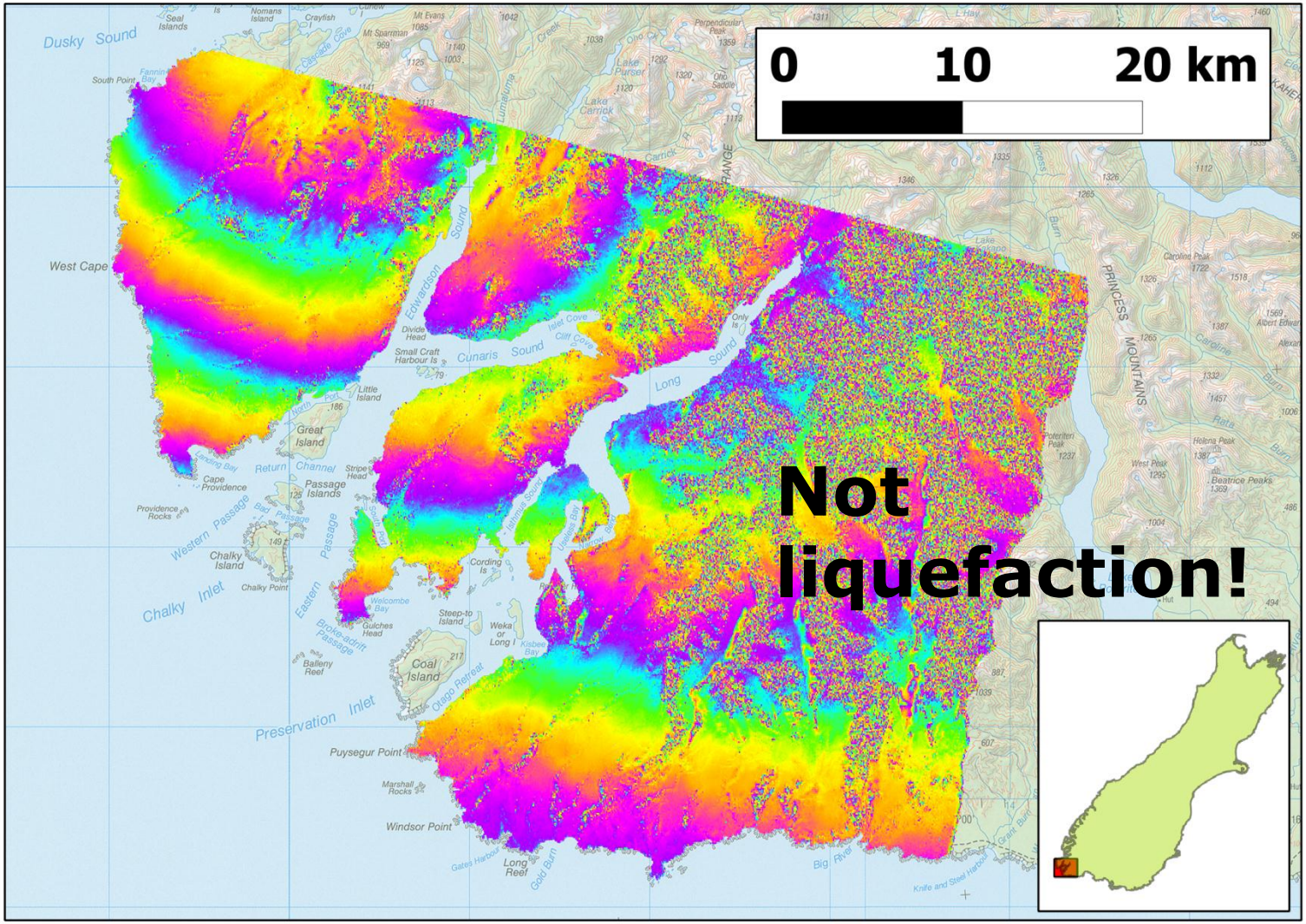
Combining Techniques to Maximise Temporal Resolution





From Beavan et al (2011)

Other sources of image incoherence



Summary of Uses for InSAR in the National Reference Frame

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- As a direct observation of displacement between two epochs
- Combined with GNSS (and other measurements) to create deformation models of events
- Develop time series where CORS are lacking
- Identify areas of highly localised disturbance