# Long-term development of Triadic Resonance Instability

*Katherine Grayson*
*Stuart Dalziel*
*Andrew Lawrie*

DAMTP
University of Cambridge

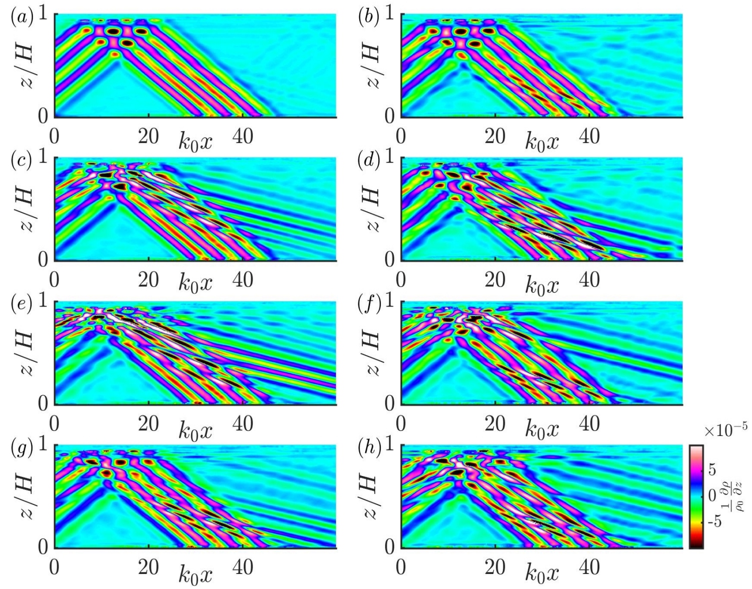
NERC DOCTORAL TRAINING

UNIVERSITY OF CAMBRIDGE

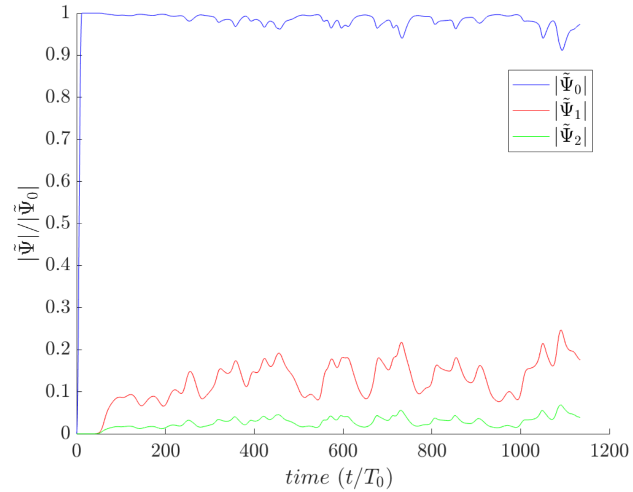
**Experimentally** observed fluctuations during TRI to the:

- Spatial location of the resonant waves
- Amplitude of all thee waves
- Frequency of the two resonant waves while always satisfying $\omega_0 = \omega_1 + \omega_2$

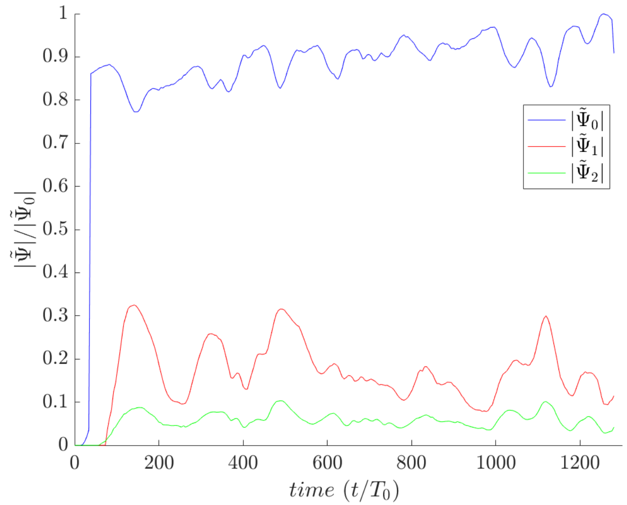
Using **weakly non-linear theoretical modelling** we have captured these dynamics which are due to **the finite beam width.**




Experimental snapshots showing the primary wave beam becoming unstable to TRI.




Model results of the amplitude of the three triad waves over 1.5 hours.

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