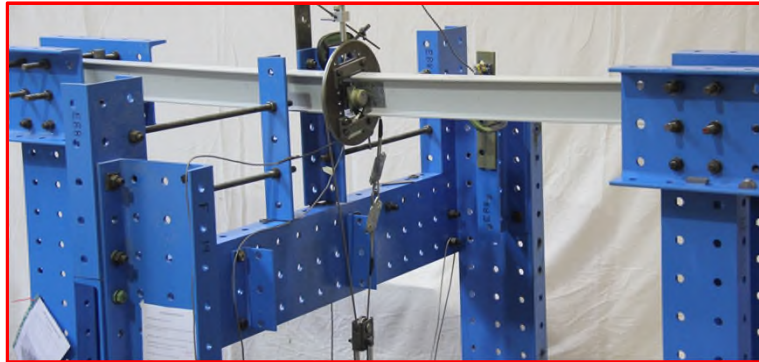


Lateral Torsional Buckling resistance of Pultruded FRP beams by testing

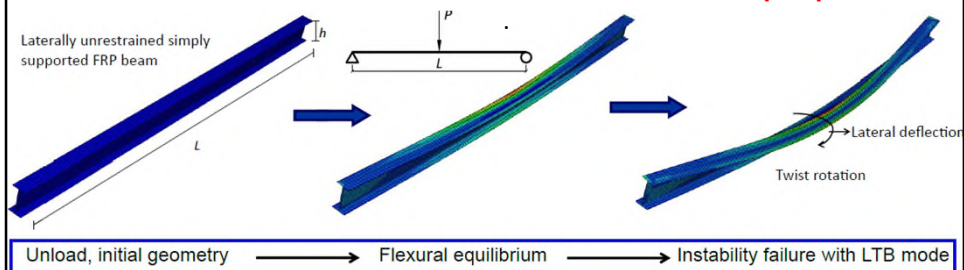


PhD student: Tien-Thuy Nguyen
Supervisors: Dr Tak-Ming Chan & Prof. J. Toby Mottram

WARWICK

1

WHAT IS LATERAL TORSIONAL BUCKLING (LTB)?

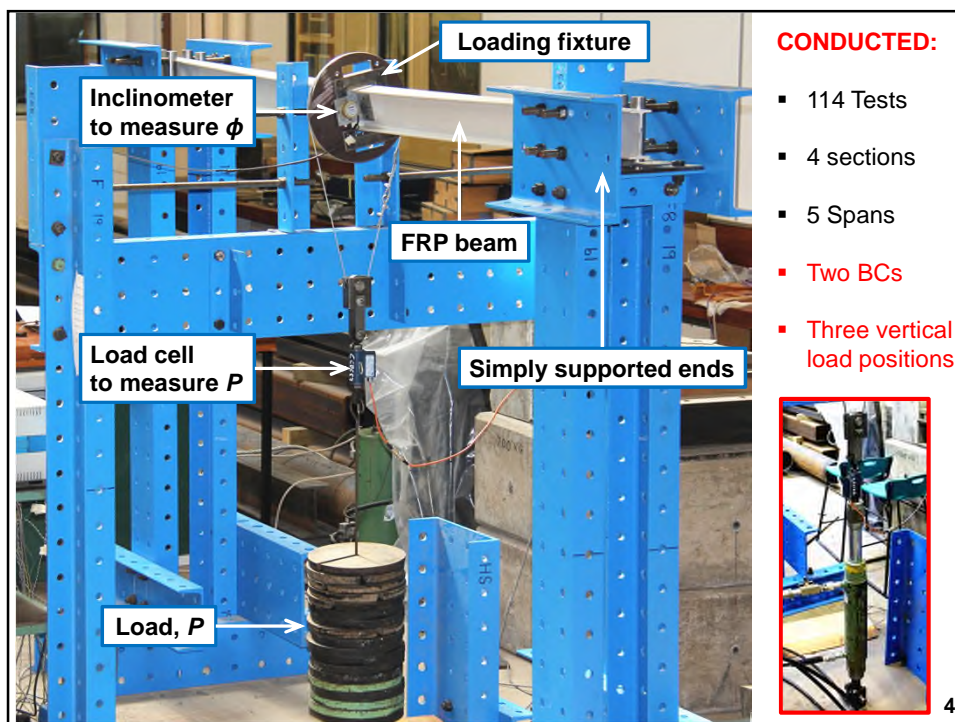
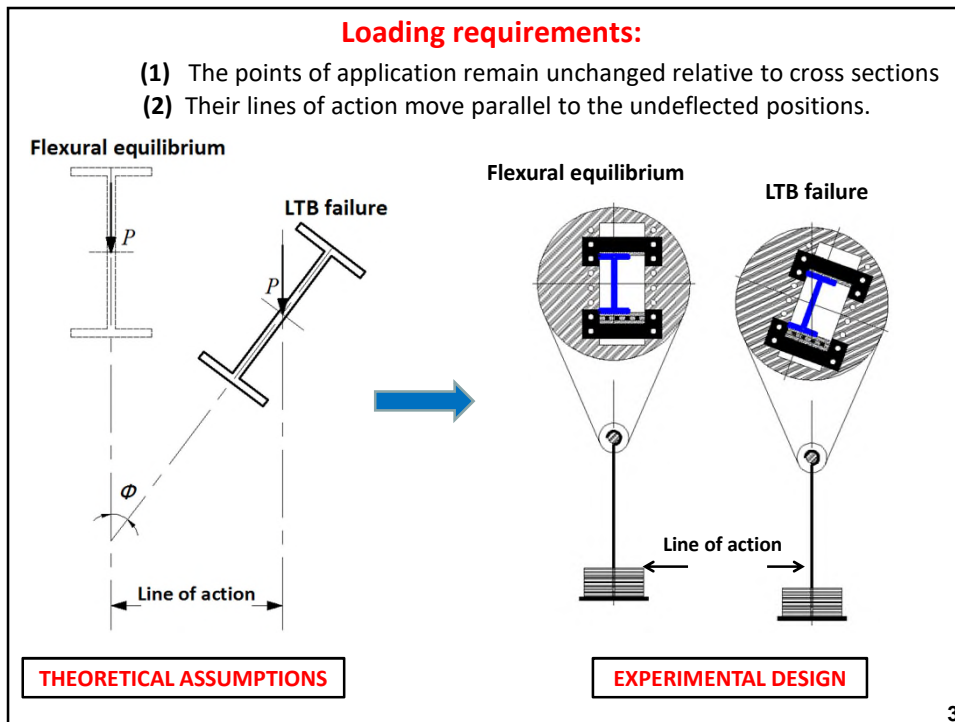


WHY STUDY (LTB)?

- (1) LTB is an important global instability failure mode in design.
- (2) Currently lack of recognized design standard.
- (3) Need more comprehensive data to validate design formulae.

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2



- *Two BCs*

BC1 **BC2**

- *Three vertical load positions*

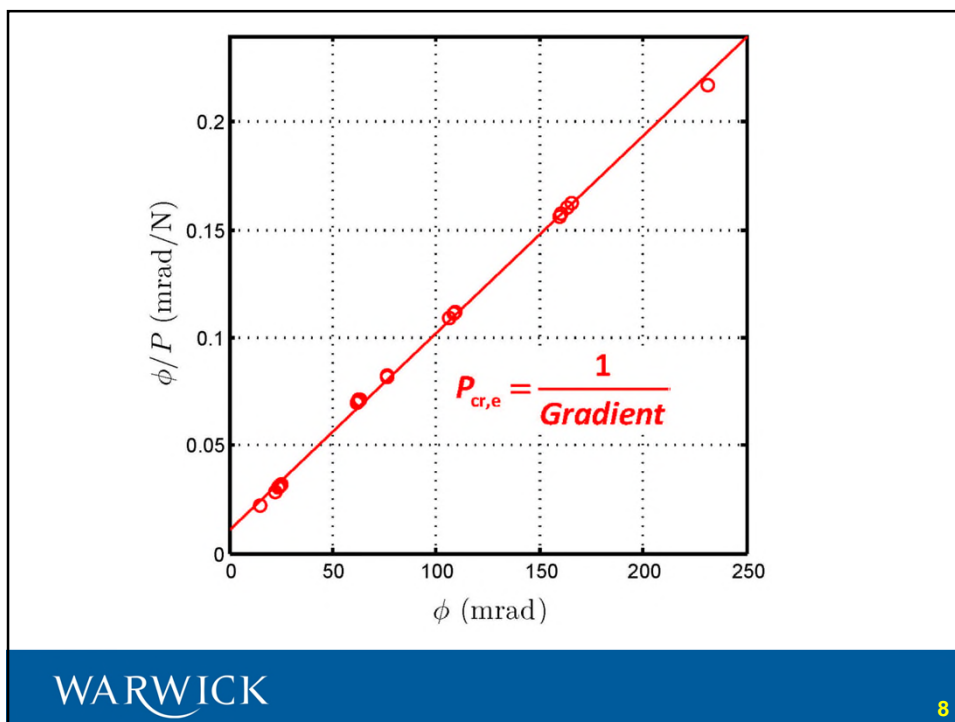
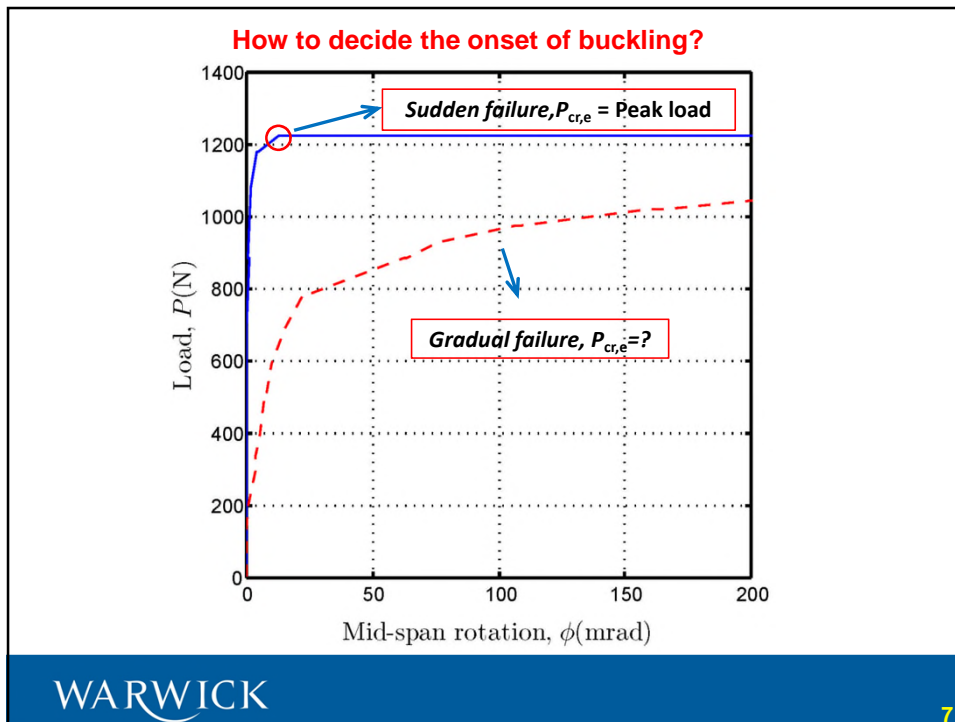
Top flange loading **Shear centre loading** **Bottom flange loading**

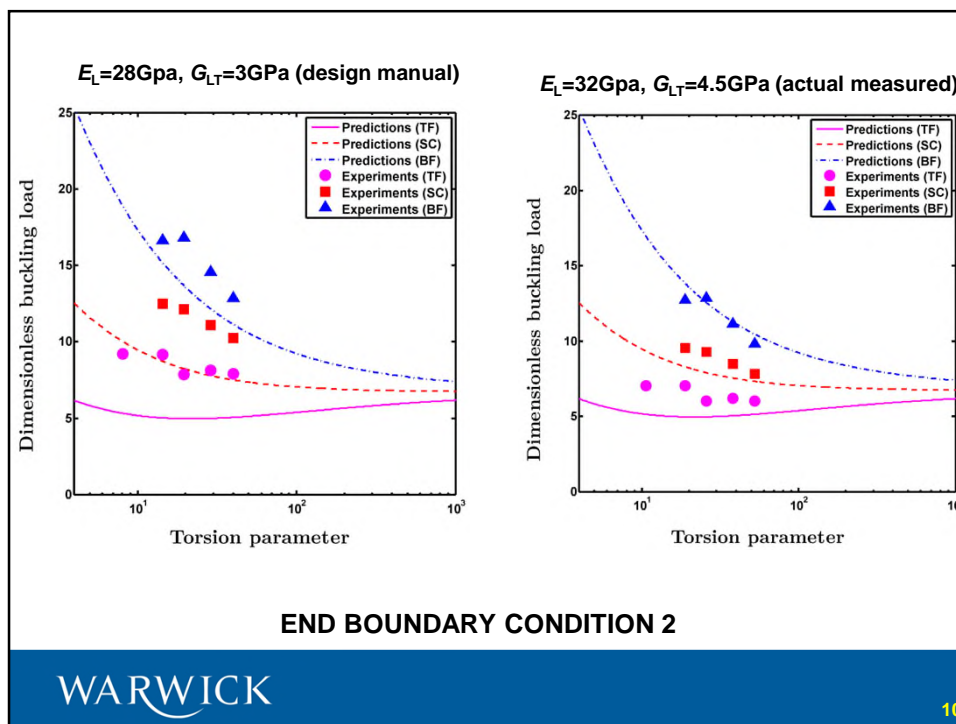
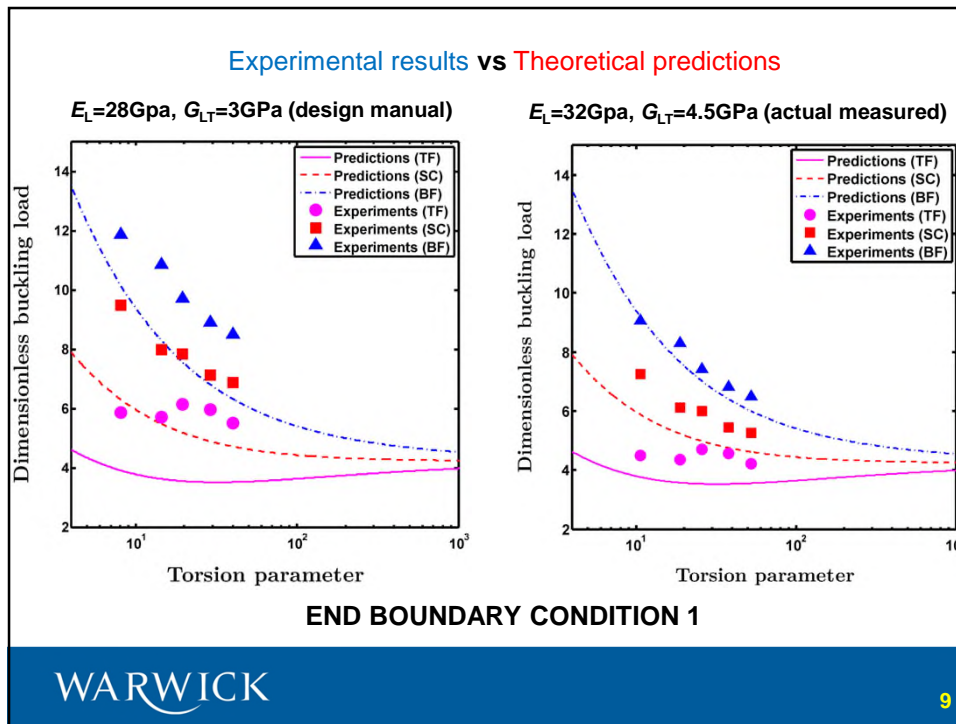
Displacement transducers
Inclinometer

Top flange loading **Shear centre loading** **Bottom flange loading**

5







Concluding Remarks

- 1. Test rig was able to satisfy the theoretical requirement of loading and displacement conditions.**
- 2. comparison showed that the closed-form equation may be suitable after modification and calibration for inclusion in a design standard.**
- 3. The modification could be carried out by following the procedure given in EN 1990:2002 deliver the material safety factor for the LTB ultimate mode of failure.**

Thank you for your attention

Any questions?