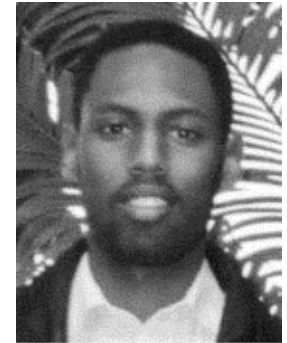


Ground & structural engineering challenges for the evaluation of the whole life performance of civil infrastructure

Our team



Cambridge – Cam Middleton, Janet Lees, Mohammed Elshafie
Imperial College – Nick Buenfeld

Further academic
partners

Steering committee



Our ethos

- Think big
- Integrate ground and structural engineering
- Resist temptation to revert to comfort zone

The future

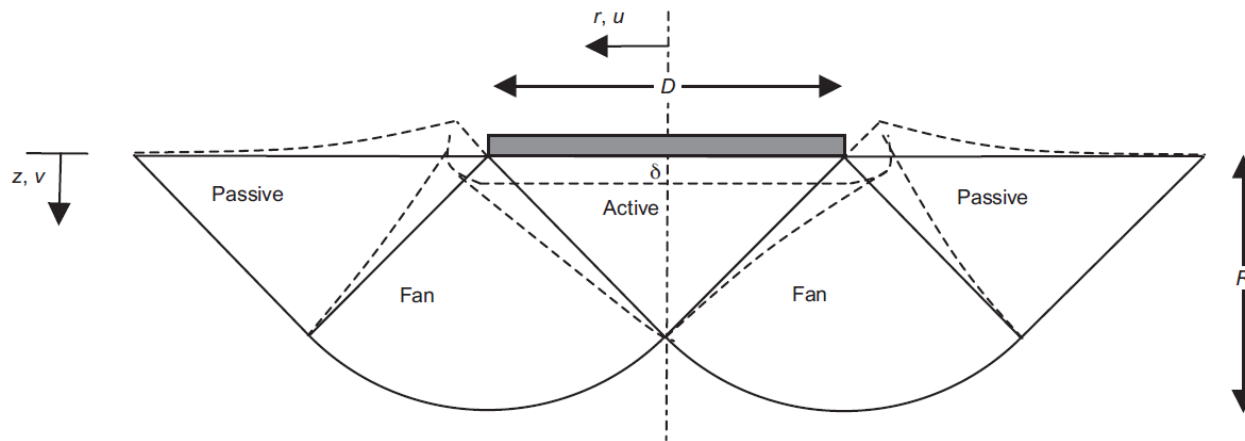
- BIM?
 - there are many different interpretations
 - nobody knows what it really means
 - lack of technical and academic rigour
- How do you conduct research on BIM?
 - visualisation
 - how to get pieces of the model to talk to each other?

The future

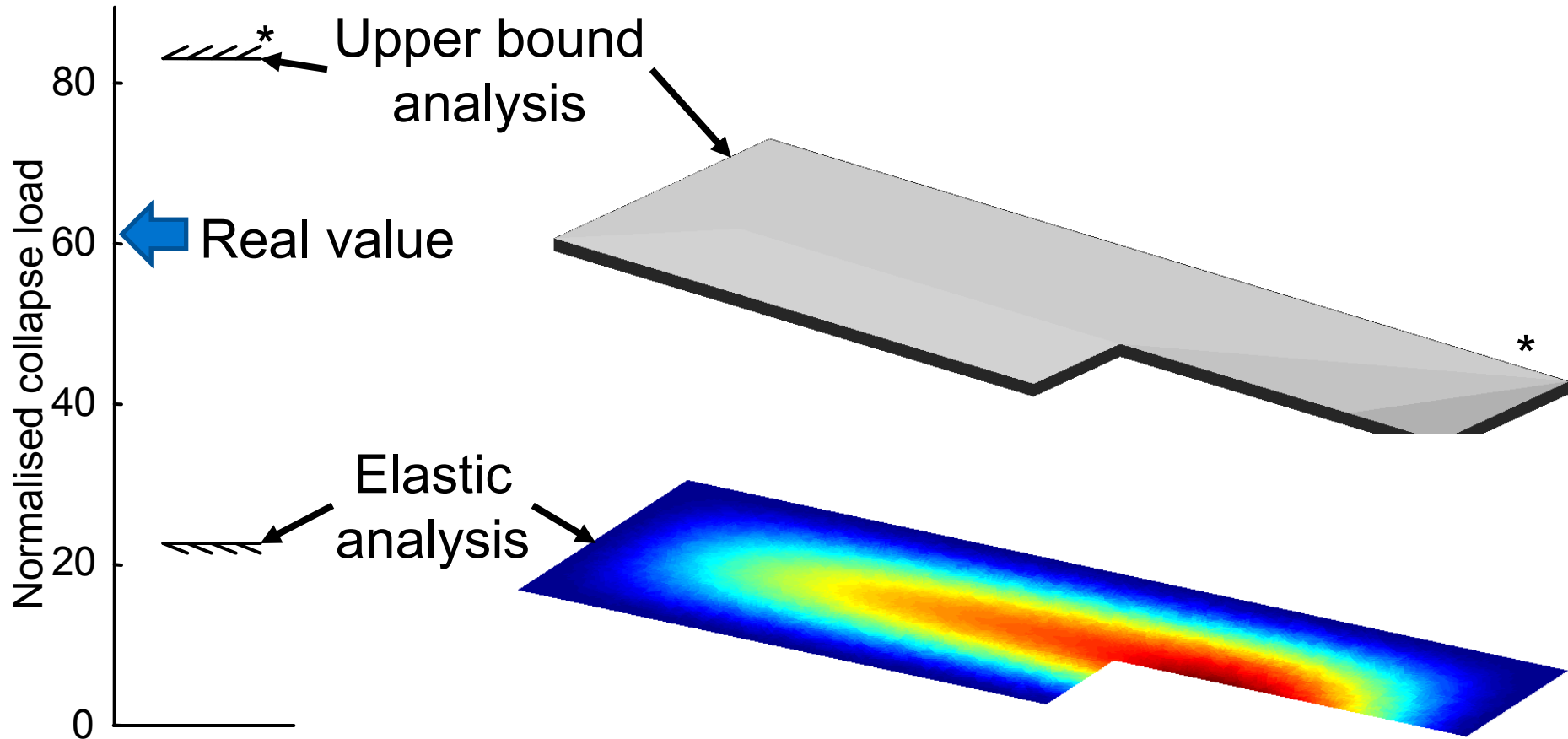
- What is the role of technology advances?
 - monitoring
 - digital representations
- How does ground and structural engineering research fit in?
 - through breakthroughs in understanding e.g. Mobilised Strength Design, yield line analysis

Mobilised Strength Design - Simple footing

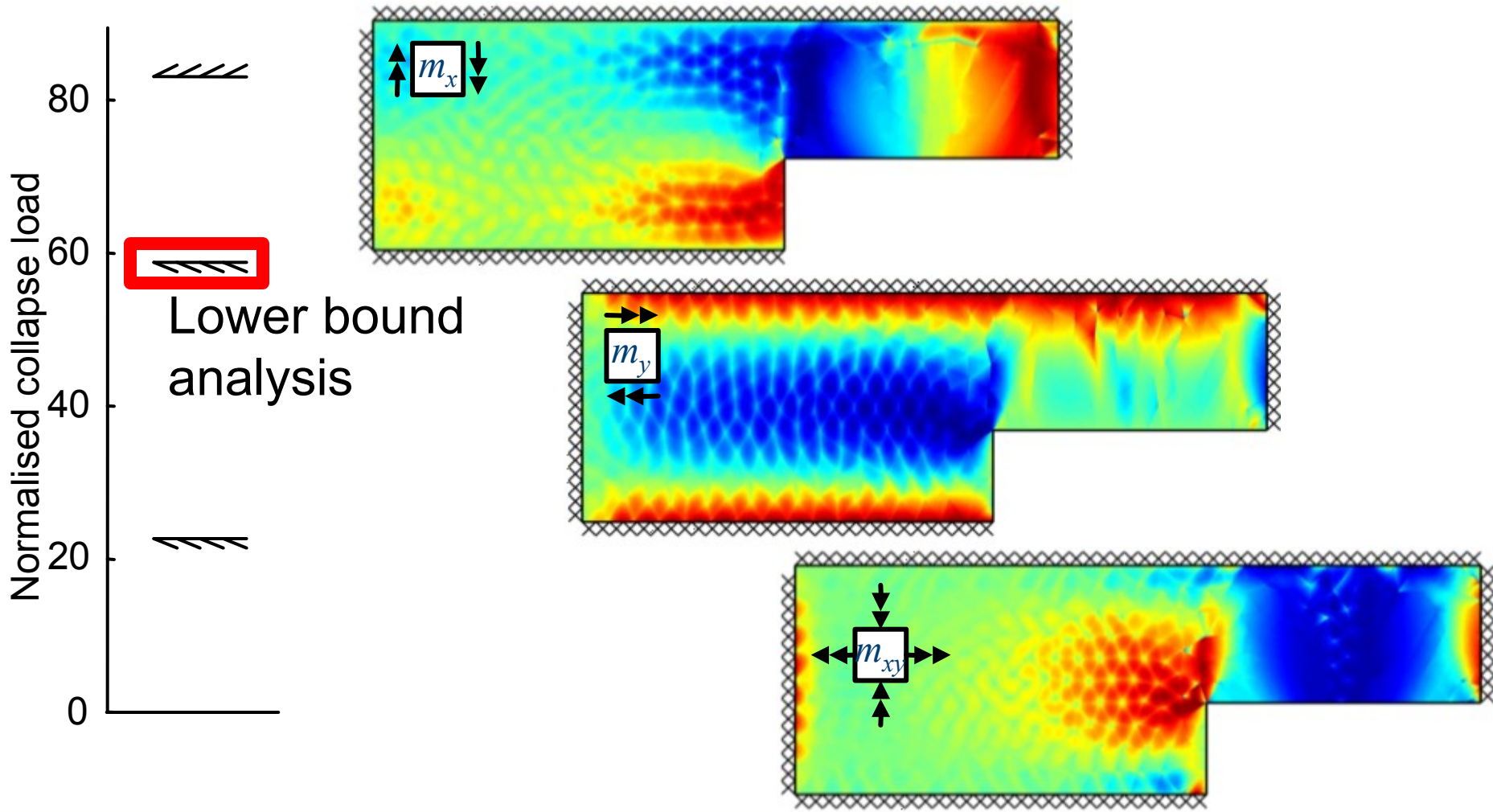
- Take a simple mechanism (e.g. Prandtl)
- Plasticity calculations
- Method assumes self similarity between the stress-strain curve of the soil and the load settlement curve
- Quick method to determine ground displacements (Bolton, 2012 , Rankine Lecture)



Plasticity methods - Slab



Lower bound



Upper bound

