

System behaviour in prestressed concrete T-beam bridges

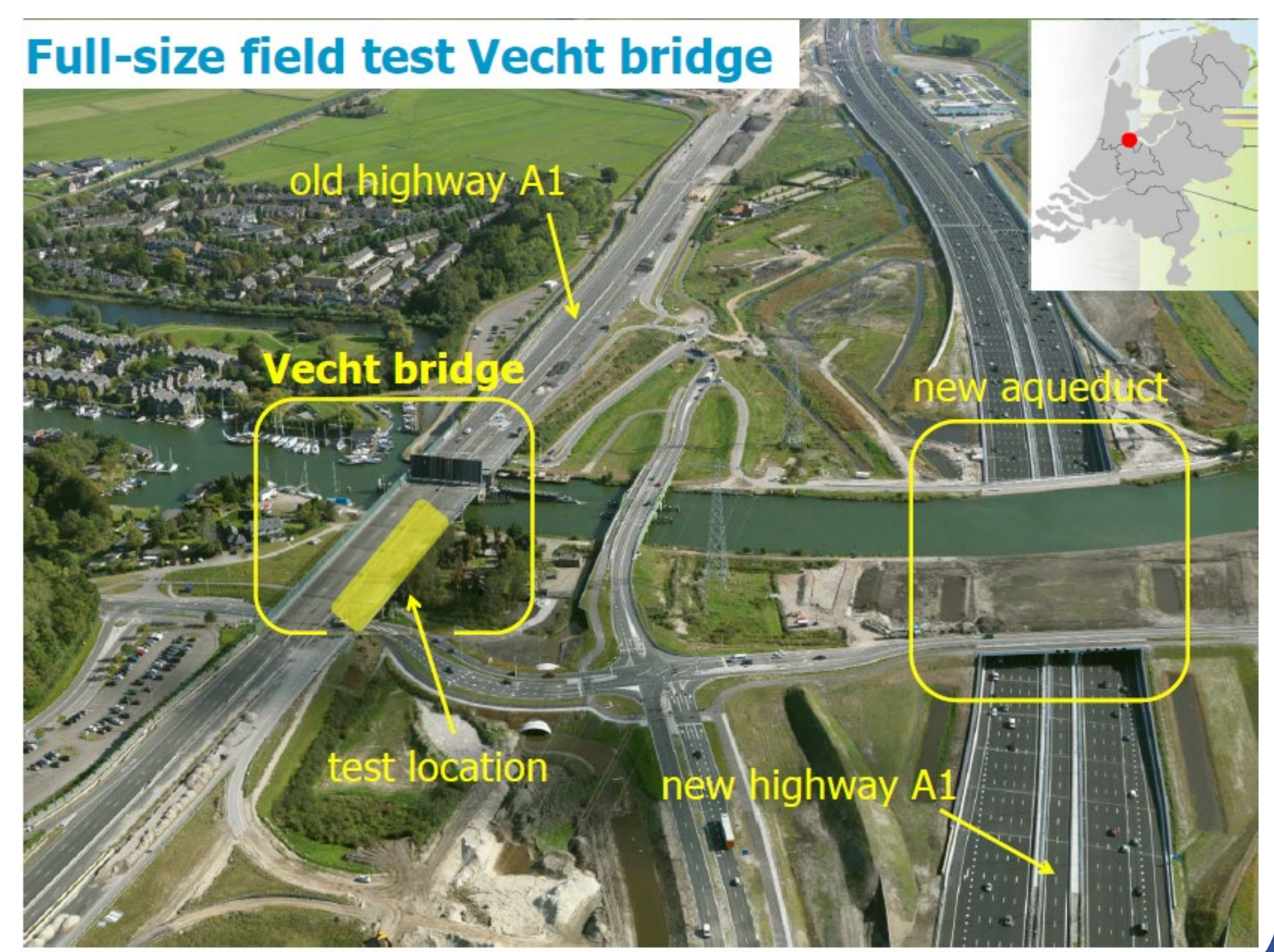
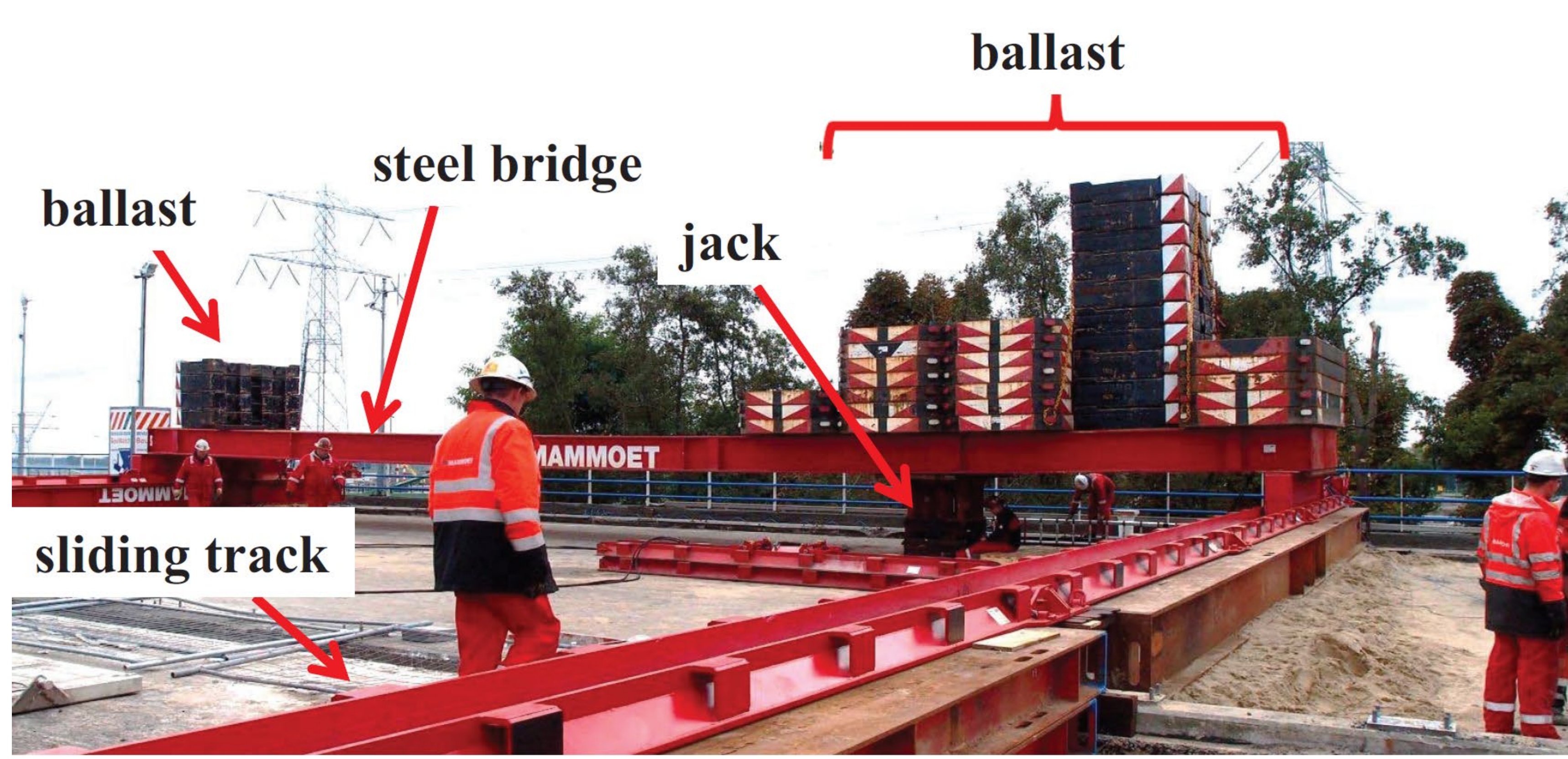
- **Goal (s)**

- Investigate additional load capacity by arch action and compressive membrane action in prestressed T-beam bridge deck
- Compare individual T-beam versus bridge deck strength & behaviour

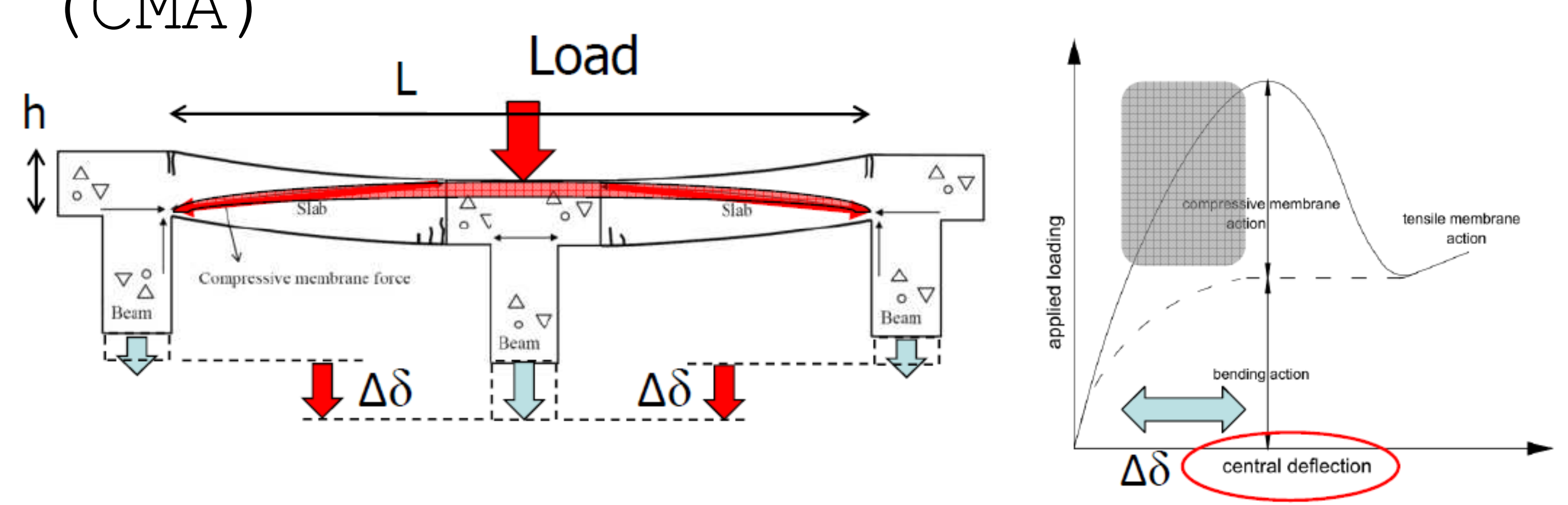
- **Expected results**

- Significant increase in bridge deck strength by system behaviour

Full-size collapse tests Vecht Bridge Muiden (bridge constructed in 1962) • Extend life span of bridges



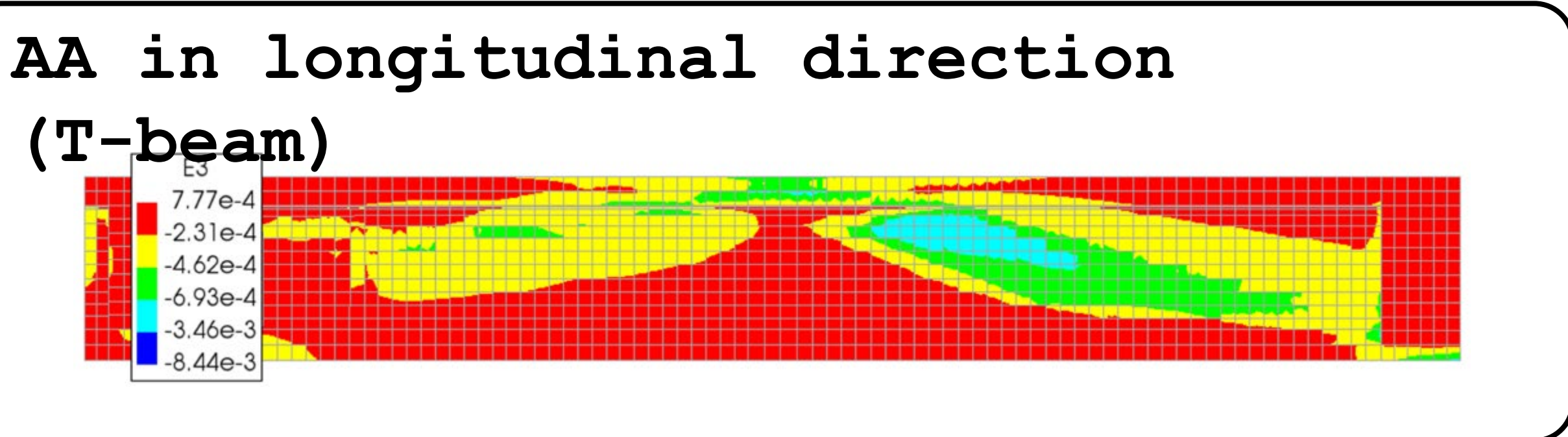
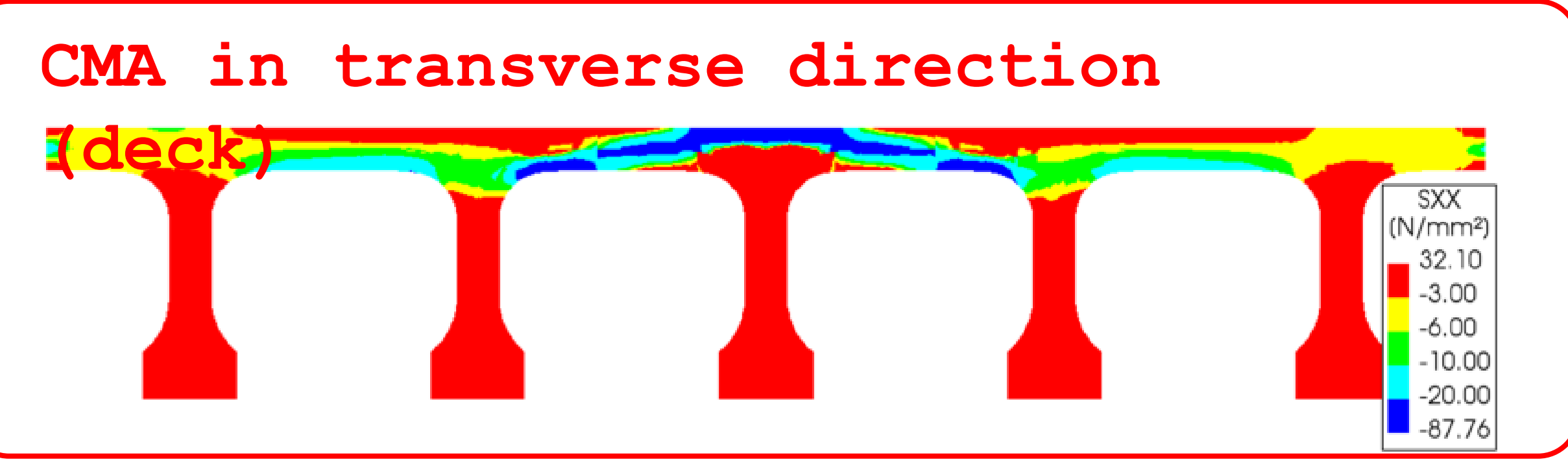
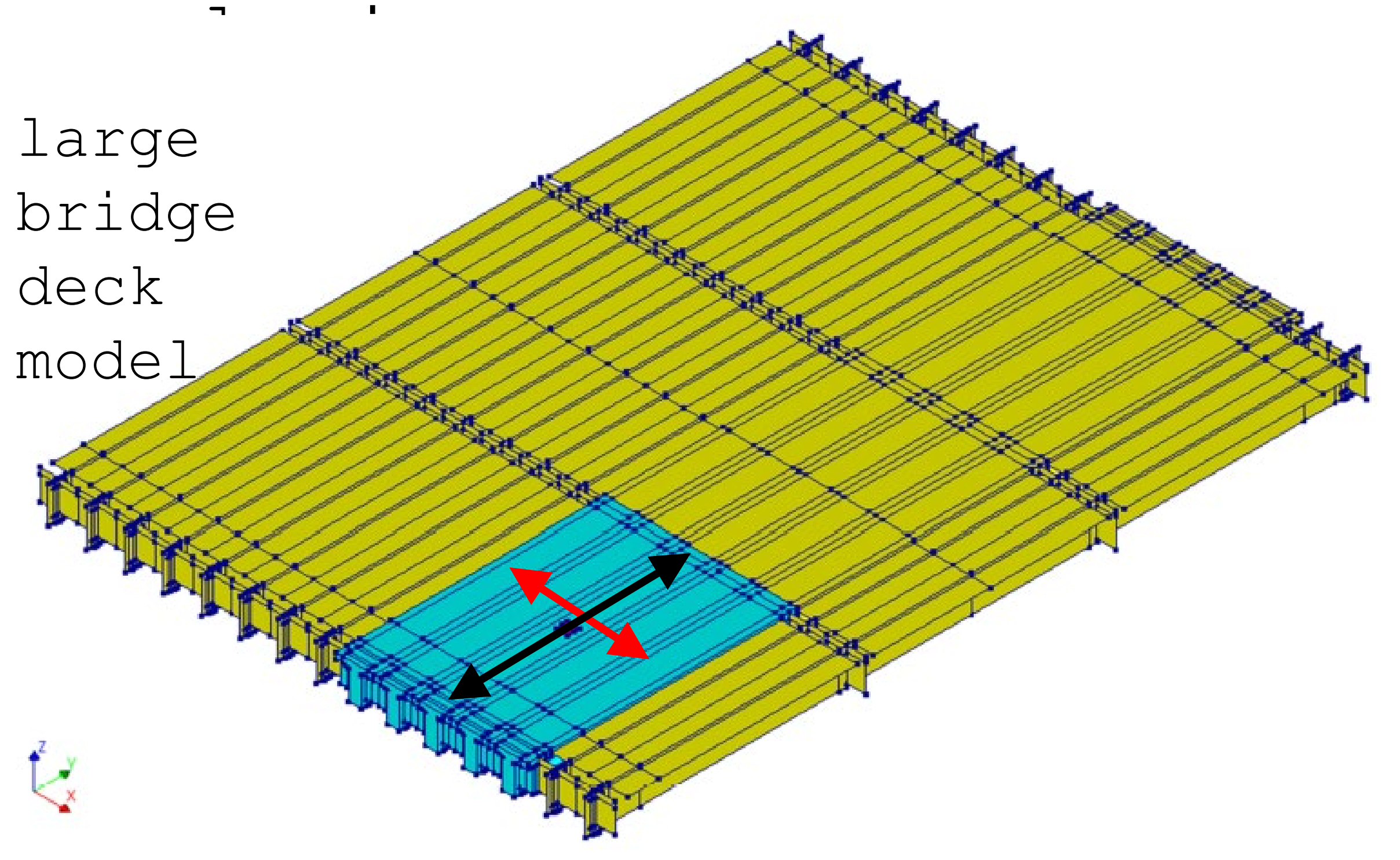
Compressive membrane action deck (CMA)



Main parameters: slenderness deck, horizontal stiffness (constraint), concrete compressive strength

Nonlinear finite element

large bridge deck model



Arch action (AA) T-beam

