



**COLAPSO PROGRESIVO
Y ROBUSTEZ
DE ESTRUCTURAS DE EDIFICIOS**

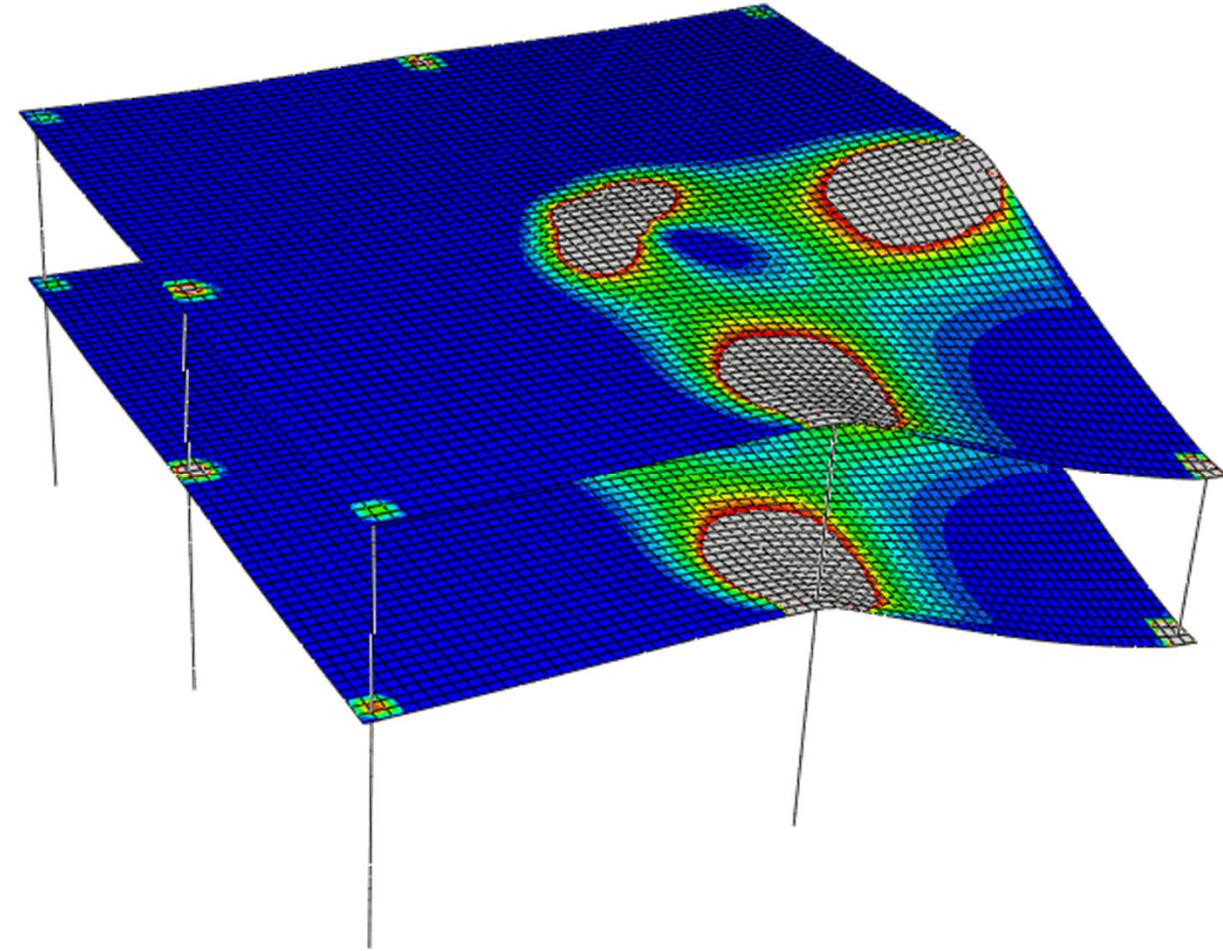
Sociedades resilientes ➡ Edificios resilientes



Fallo en columnas de esquina



Fallo en columnas de esquina







Mejorar resiliencia – robustez

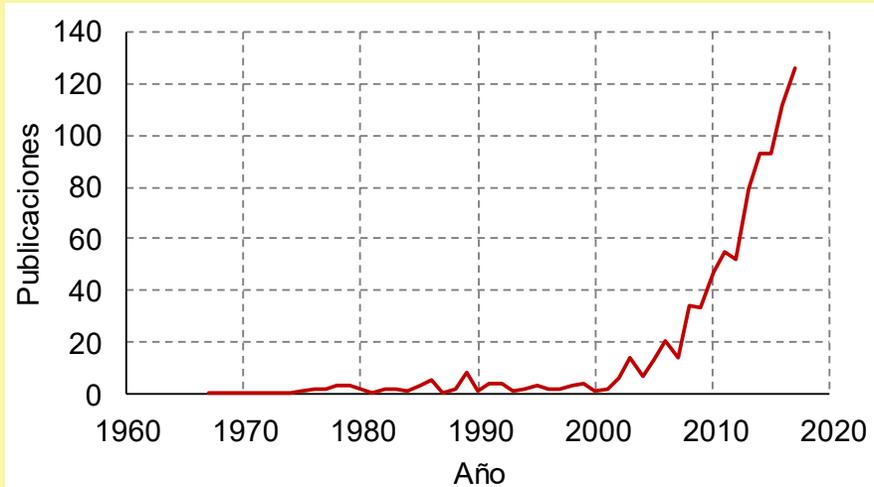
Edificios con estructura prefabricada de hormigón

Colapso progresivo

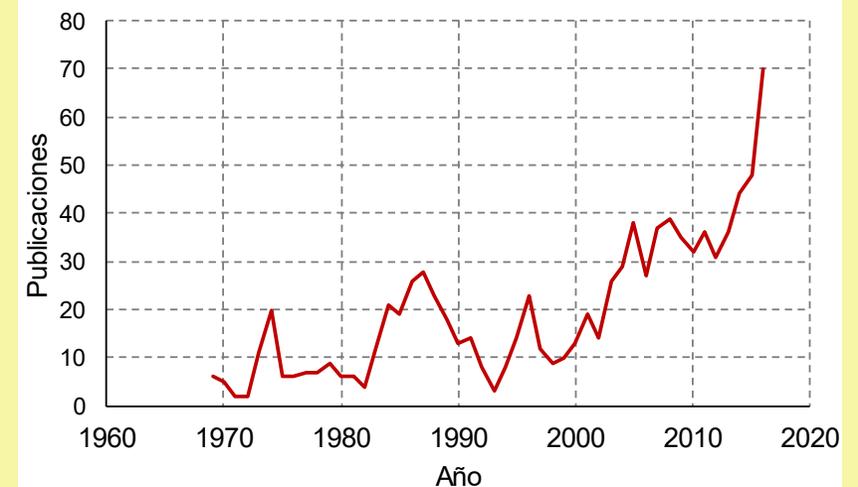


PREBUST – Estructuras prefabricadas

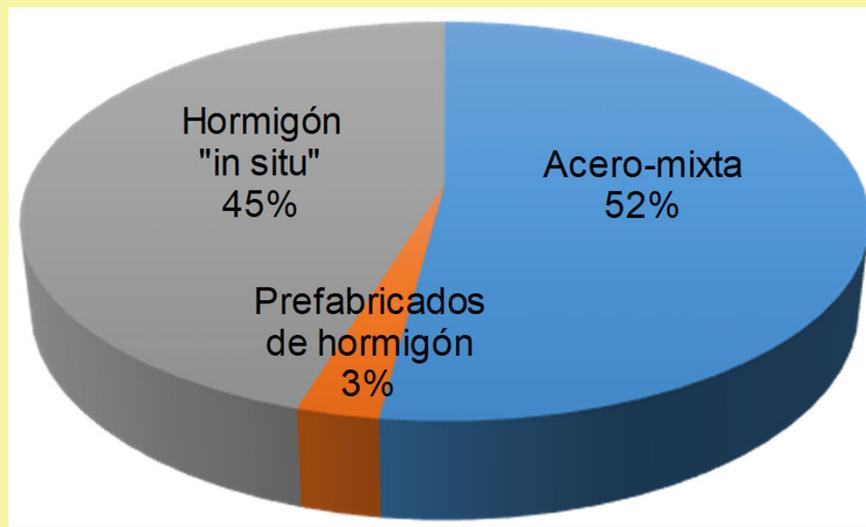
Colapso progresivo



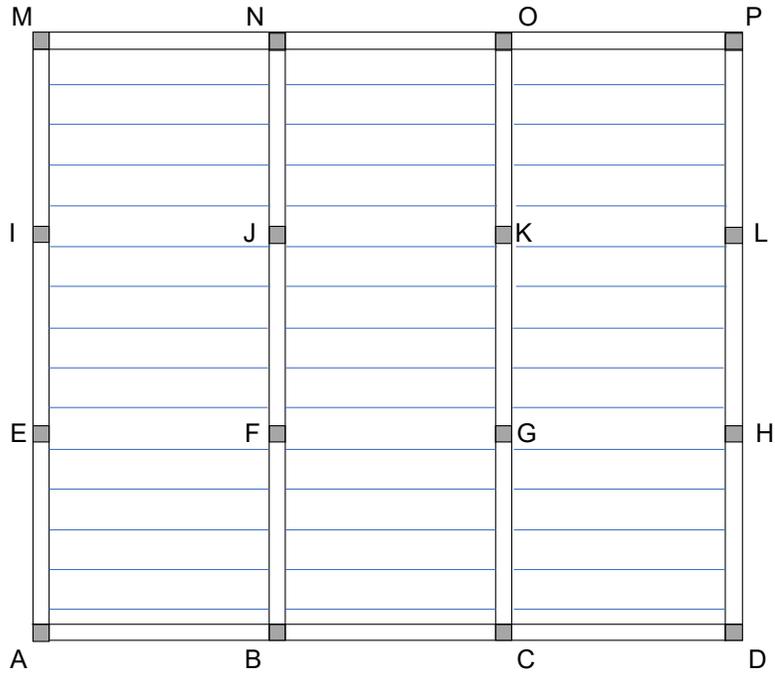
Prefabricados de hormigón



Situación actual

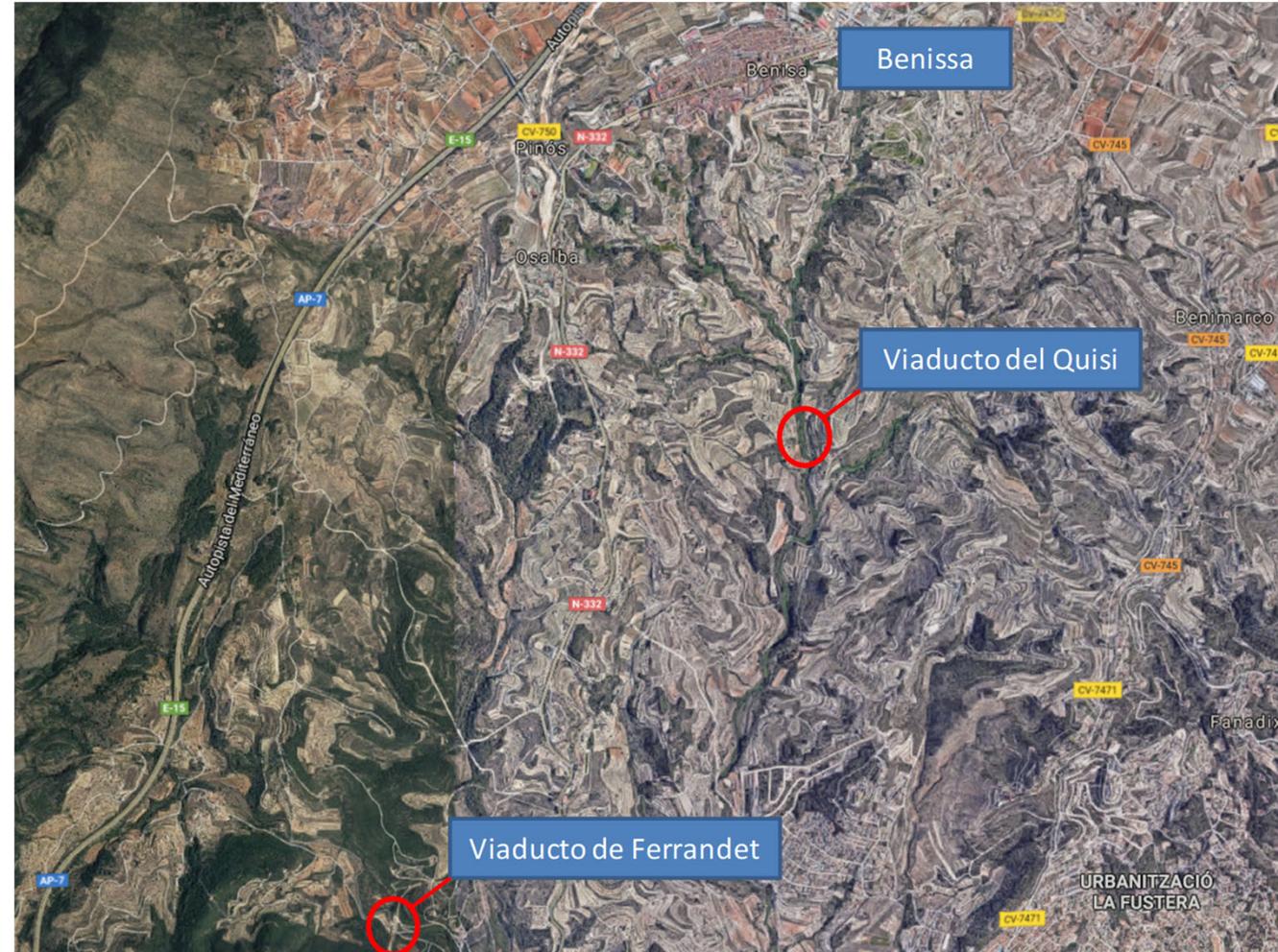
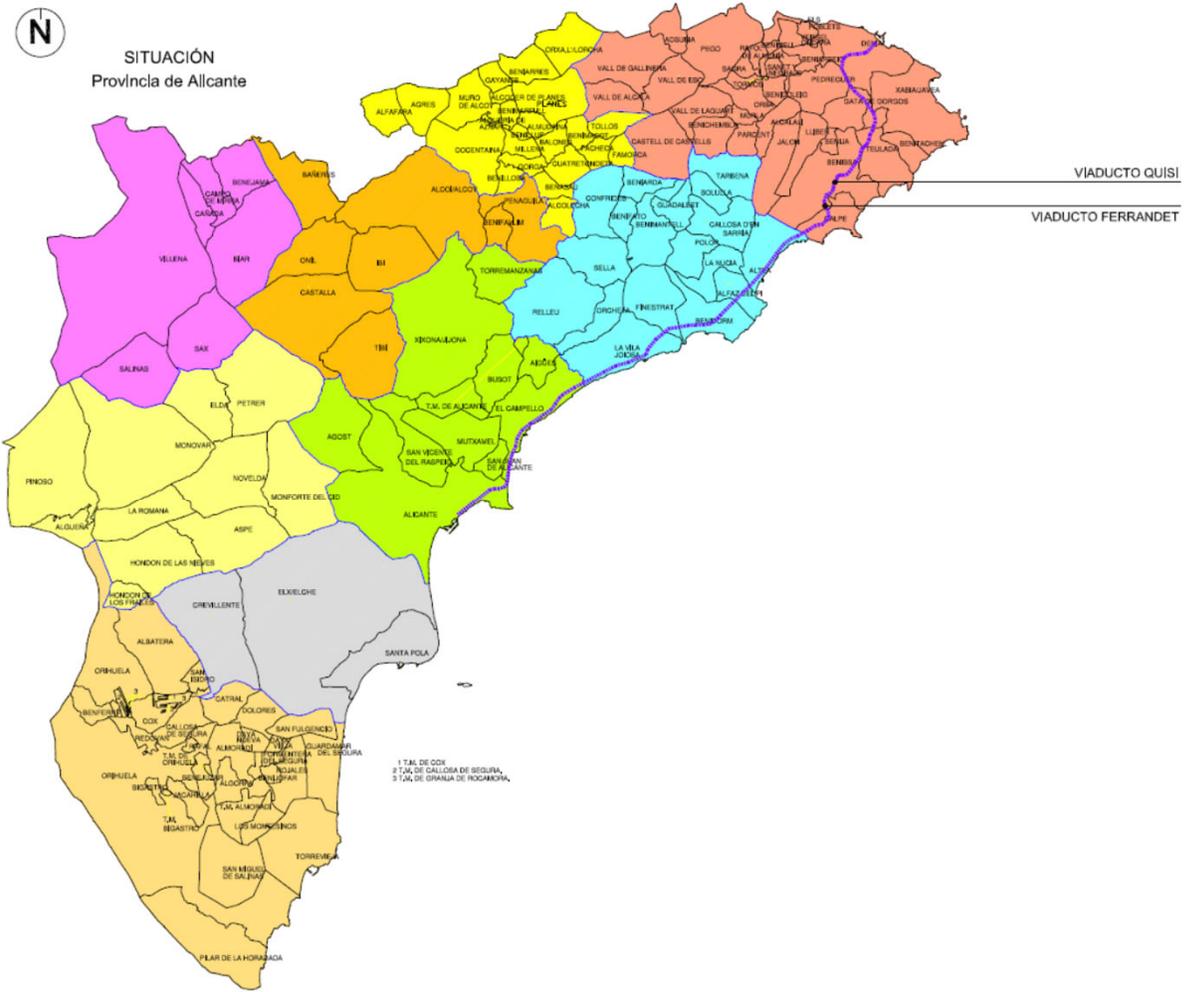


PREBUST – Estructuras prefabricadas



ESTUDIO DE SEGURIDAD FRENTE A FATIGA DEL VIADUCTO DEL QUISI

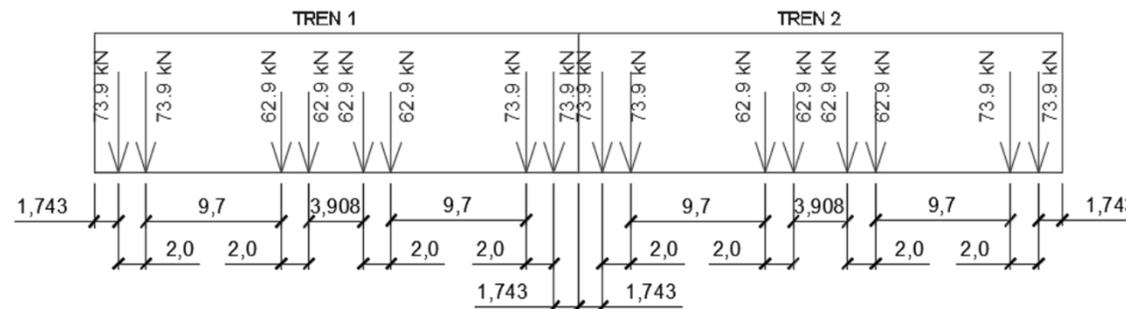
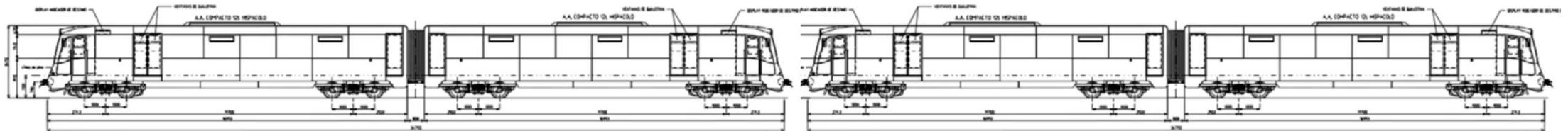
Localización



Viaductos del Quisi y Ferrandet



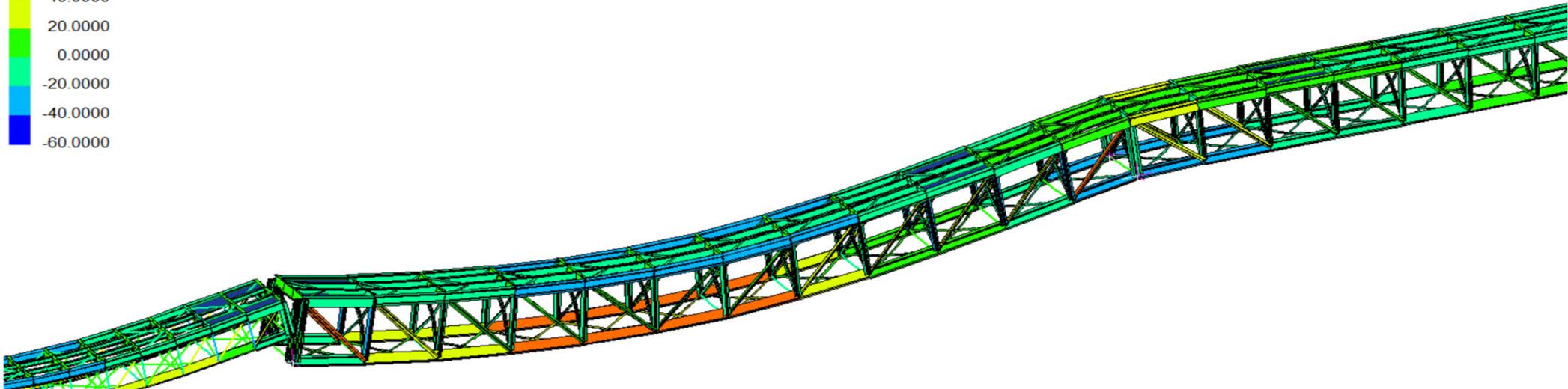
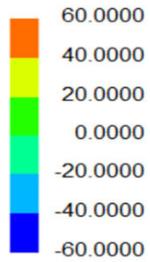
Planteamiento de los ensayos a fatiga



Planteamiento de los ensayos a fatiga

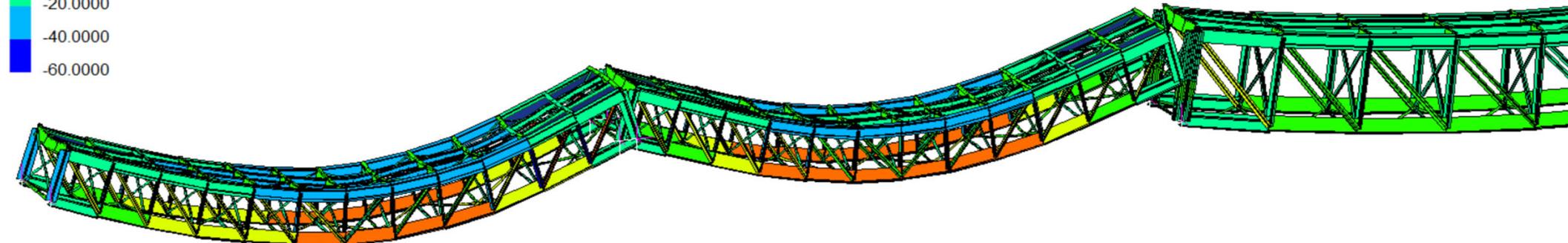
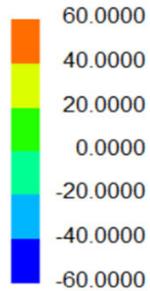
Axial Stress (MPa)

Máximas tensiones en barras en vano hiperestático



Axial Stress (MPa)

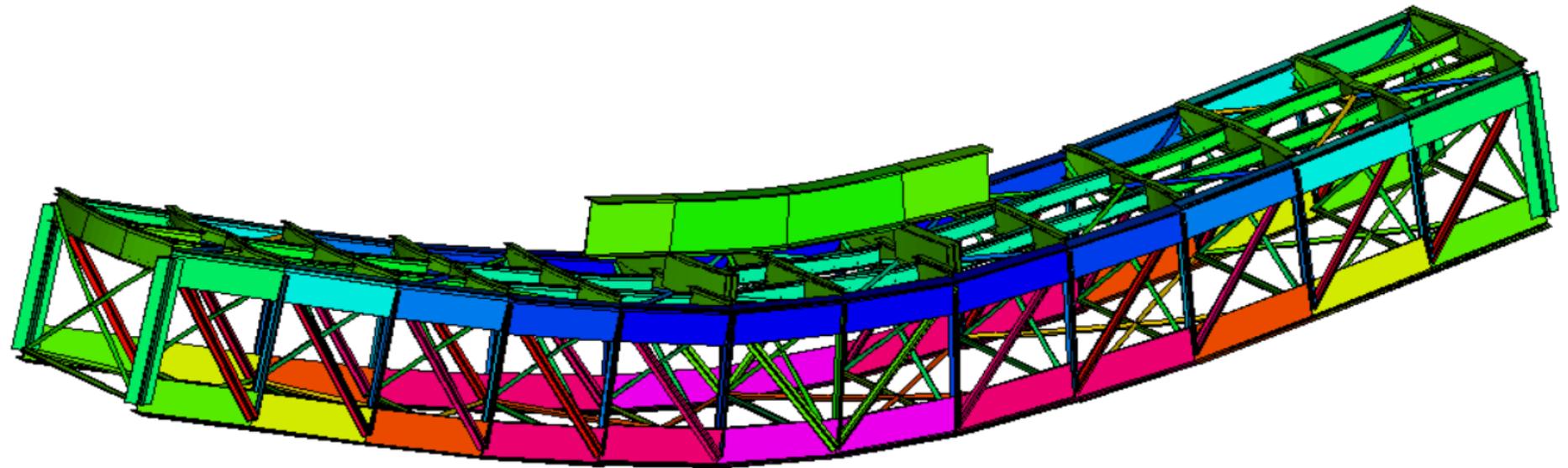
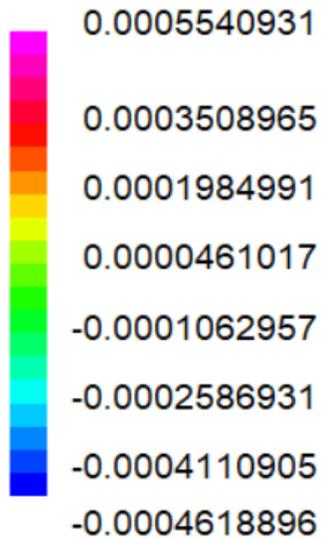
Máximas tensiones en barras en vano isostático



Planteamiento de los ensayos a fatiga

Ensayo del vano: ΔN de 1250 kN $\rightarrow \Delta \varepsilon = 475 \mu\varepsilon \rightarrow \Delta \sigma = 100$ MPa

Axial Strain



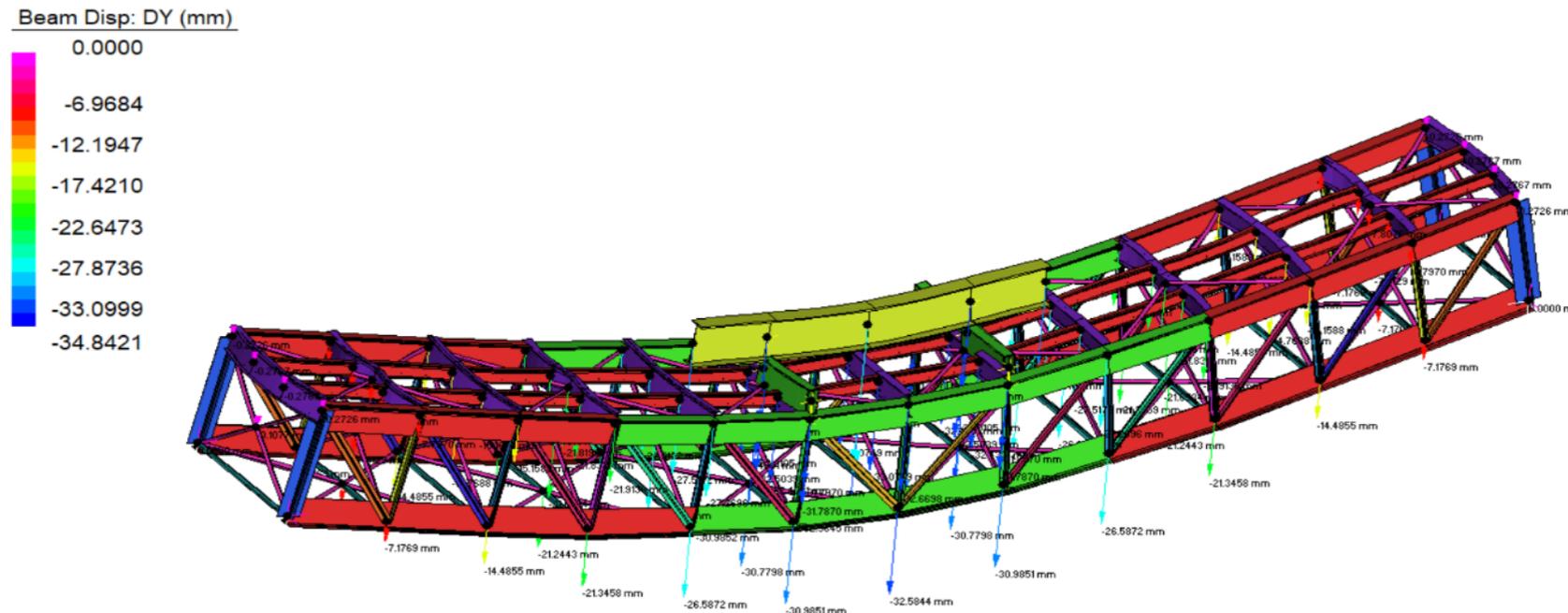
Ensayo del vano

Número de ciclos de 100 Mpa de $\Delta\sigma$ equivalente a 10 años de circulación.

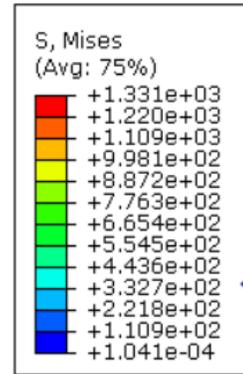
Hipótesis: 40 trenes diarios, completamente cargados = 146100 trenes

Número de ciclos de $\Delta\sigma = 100$ Mpa equivalente:

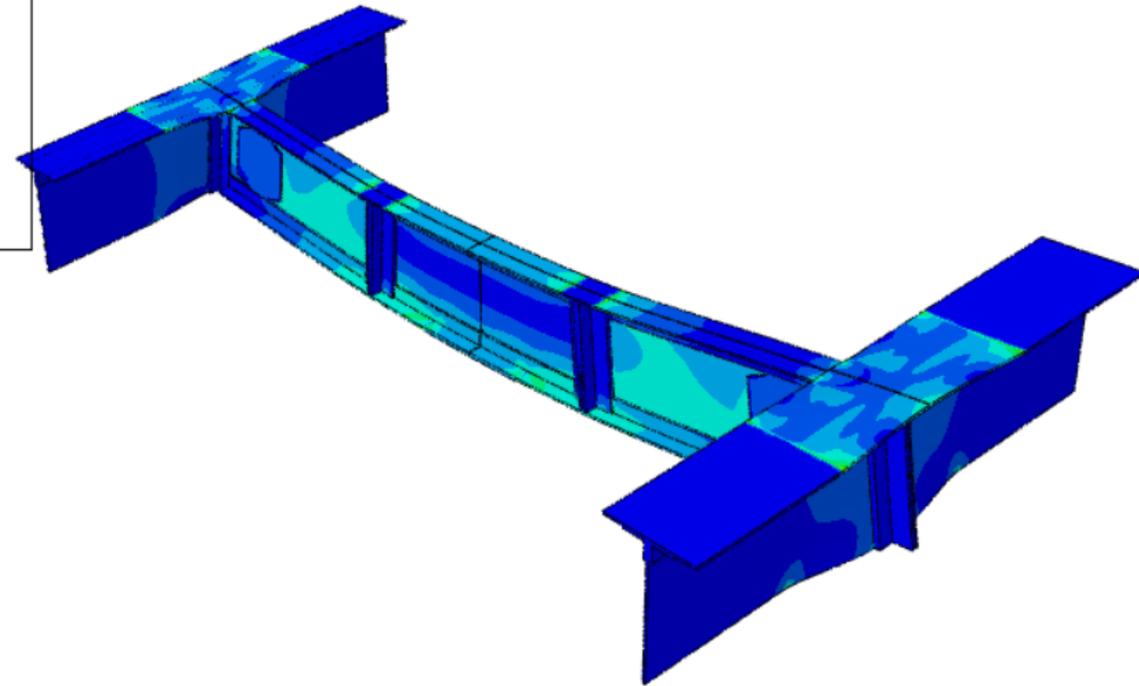
44.548 ciclos



Planteamiento de los ensayos a fatiga



Y



Transporte



Transporte





Apoyos



MONITORIZACIÓN CON FIBRA ÓPTICA

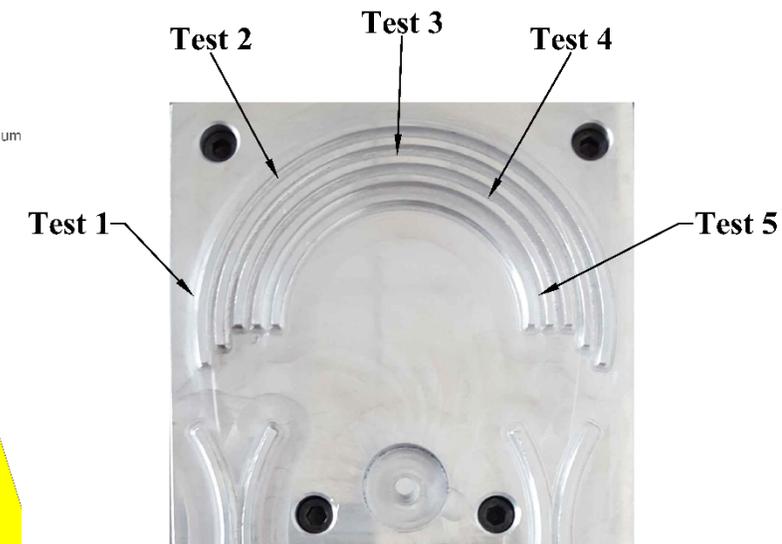
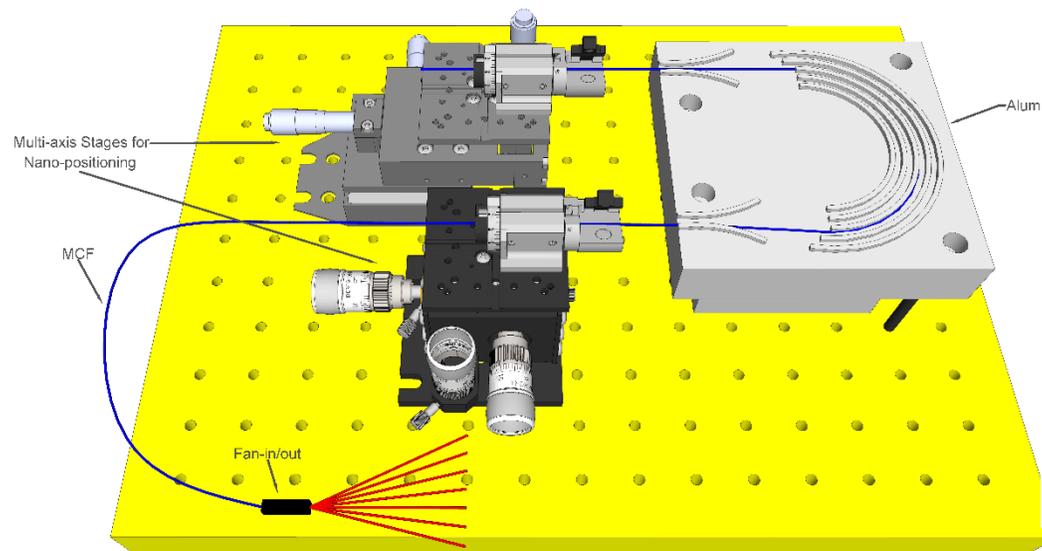
Monitorización con fibras Multicore



FINESSE



MARIE CURIE ACTIONS

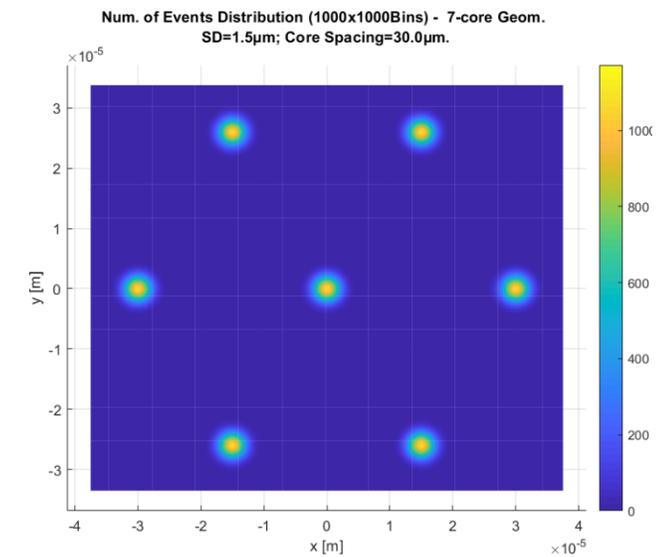
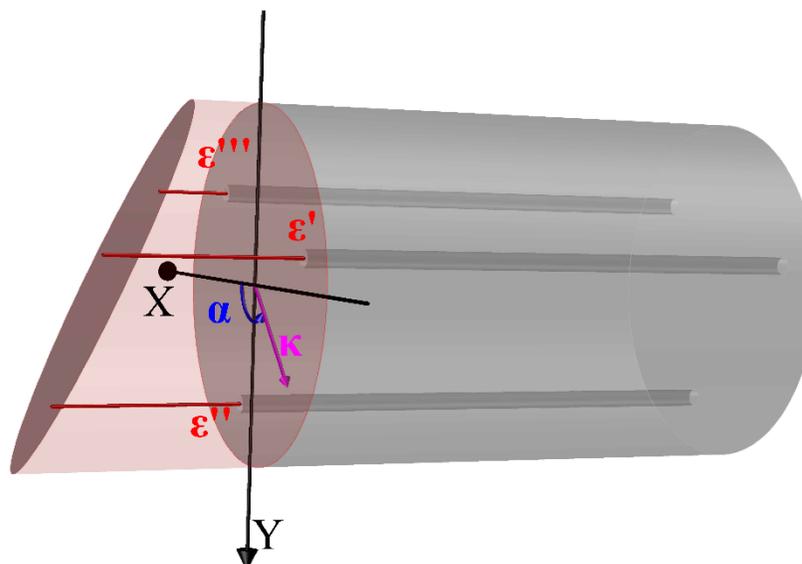


3.880.324 €

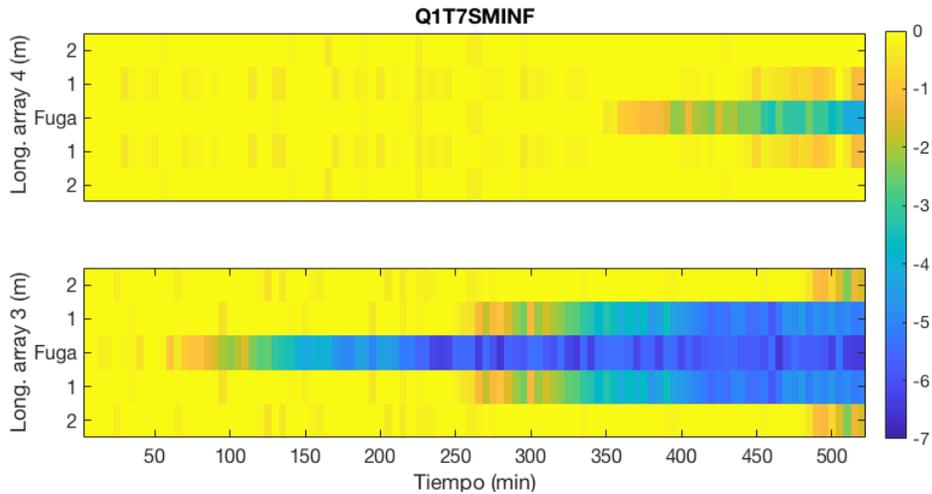
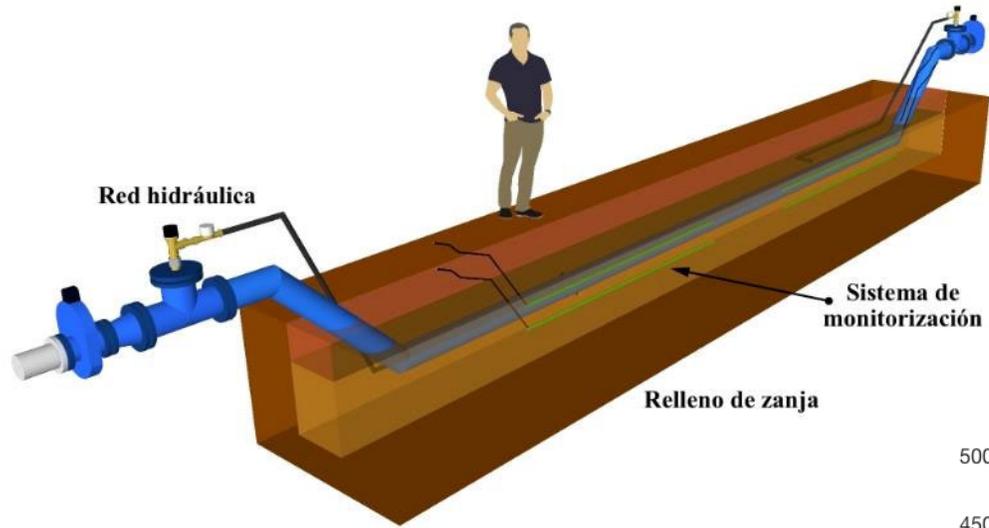
26 socios

8 países

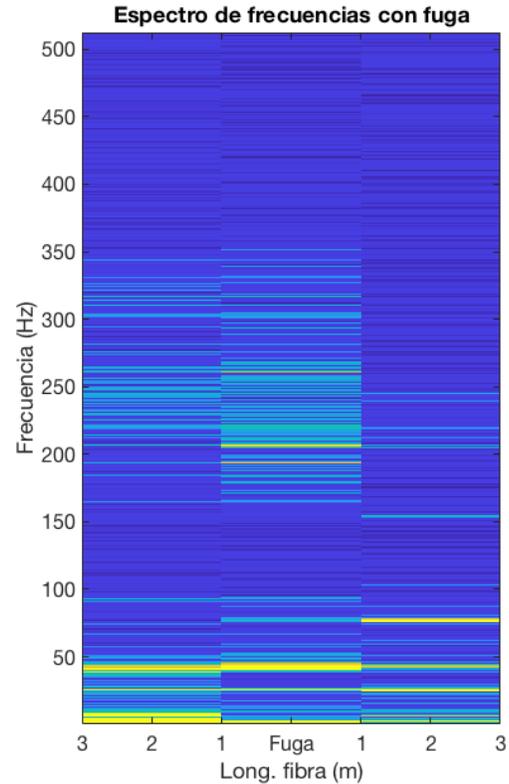
15 contratos predoc.



Monitorización para la detección de fugas en tuberías

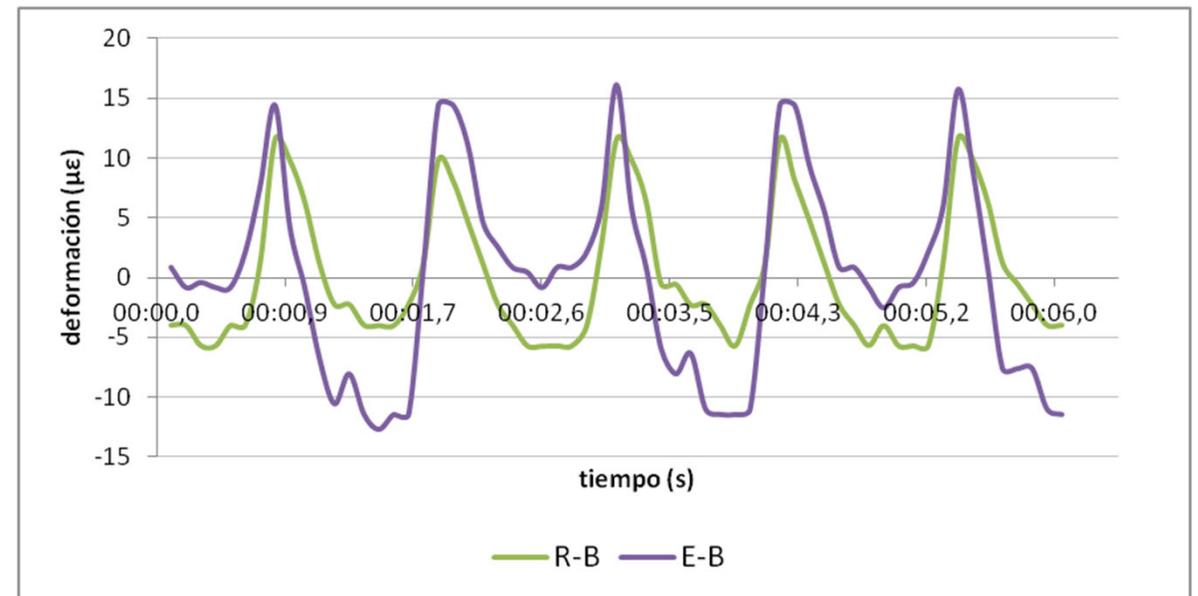
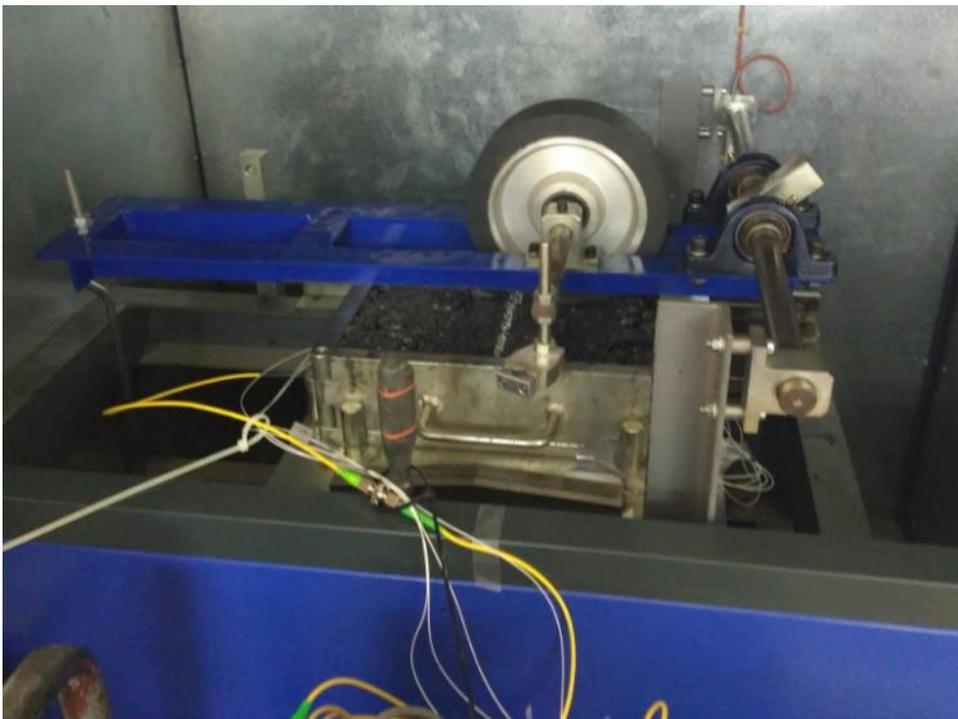
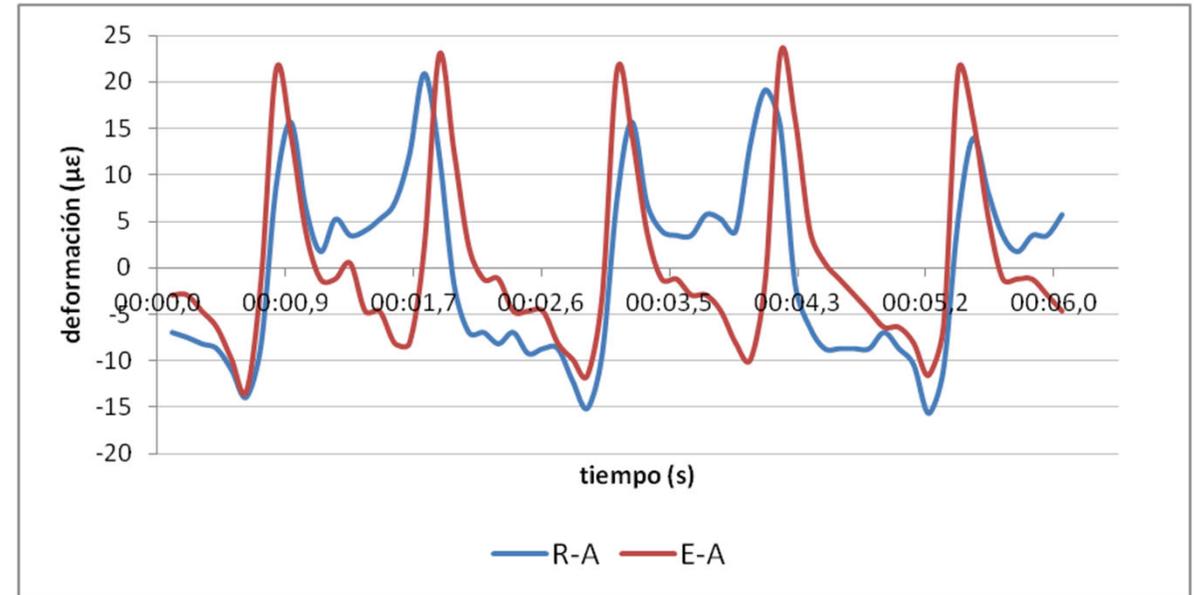
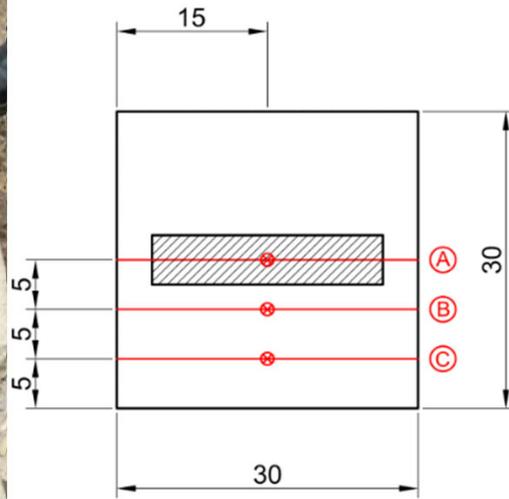


Cambios de temperatura



Distributed Acoustic Sensing (DAS)





CONSERVACIÓN DE ESTRUCTURAS

Plan de conservación del Paraninfo de Cheste

