

# Experimental / Analytical Substructuring

# Where do we stand

1. Theory of assembly is clear
2. Different strategies for representing the substructure dynamics is are well understood
3. There is still a big gap between what is theoretically possible and what is technically achievable. This is for instance due to the fact that
  - a) *Measurements (and signal processing of them) remain imperfect*
  - b) *one can not measure all dofs (rotations ...) and also not everywhere (interface cannot always be instrumented)*
  - c) *The (sub)systems measured are not corresponding to the theory (non-linearities, non-ideal boundary conditions, operational conditions that cannot be controlled, variance between similar components in production ...)*
4. Increasing research in how to combine approximate models and imperfect measurements
5. Several (new) applications related to exp.subs: TPA, health monitoring using subs. decoupling ...

# Future challenges

- improve measurement techniques to have better FRFs
- further develop post-processing techniques to guarantee physical consistency of substructure measurements
- in operation identification of substructures for health-monitoring and for hybrid testing applications

