

20 September 2017

## Structural Engineering Hands-on Workshop

Structural Engineering is the art of designing producible composite parts with low weight and best possible performances.

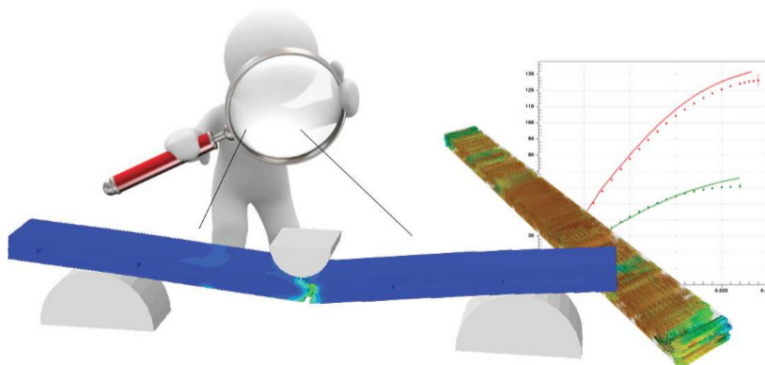
The design of composite parts is a challenge due to the many factors that impact the targeted performance. Composite material properties are highly sensitive to changes in their microstructure. Those changes can arise from the manufacturing of the part.

Integrative simulations take into account local effects arising from the manufacturing process. Microstructure information is fed into a micromechanical material model to describe realistically the distribution of material properties over the part. Results from coupled analyses can give quantitative correlation with the performance of the part as observed in measurements.

In the simulation strategy the micromechanical model is used as a tool to map the influence of manufacturing onto the material properties as found in the part.

Structural designers know the performance of their composite parts best. Modeling of composite parts is often performed in collaborative efforts that cover:

- Design of composite structures
- Investigations on the manufacturing to assess the feasibility to produce the part
- Integrative strategies to understand the performance of the part in its application environ-



Structural designers use interactive strategies to understand the performance of the part in its application environment under the influence of the manufacturing process.

