MS04: Composite forming modeling and advanced simulation (*Prof. Abel CHEROUAT, Université de Technologie de Troyes, France*)

The adoption of composite materials as a major contribution to aircraft structures followed the discovery of carbon fiber in 1964. Since that, these new composites are used in various aeronautical, aerospace, automotive, marine applications. The mechanical behavior of these materials can be analyzed in different (microscopic, mesoscopic and macroscopic) scale levels (yarn or fibre, matrix or resin, weave/knit construction, prepreg) resulting in numerous independent parameters of their forming process. Besides, different approaches can be used to simulate the composites reinforcement forming and several methods based on geometrical and finite element approximations were presented. The modelling of this mechanical behavior is important in several domains such as forming of the composite reinforcements and prepregs or in biomechanical applications. This mini-symposium addresses topics in the area of advanced composites forming and manufacturing. Contributions on the following subjects are welcome:

- Experimental techniques to characterize composite behavior
- Mechanical modelling of composite behavior
- Geometrical and finite element modeling of composite forming
- Optimization of composites forming