**V International Conference on Simulation for Additive Manufacturing, SIM-AM 2025**
**September 9-11, 2025, Pavia, Italy**

# Additive Manufacturing & Aerospace: Opportunities and Challenges for Future Scenario

**S. FRANCHITTI* AND R. BORRELLI***

* Additive Manufacturing LAB, Italian Aerospace Centre - CIRA SCpA,
Via Maiorise snc – 81043 Capua, Italy
s.franchitti@cira.it, r.borrelli@cira.it and https://www.cira.it/it

## ABSTRACT

There is broad consensus on the potential applications of Additive Manufactuirng (AM) technologies for applications in the aerospace industry. The characteristics that make these technologies attractive for this industry are numerous: the reduced lead time and associated cost, the ability to design and manufacture complex geometries that enable lightweighting, consolidation of multiple components and improvements in performance. Another important advantage is the reduced buy-to-fly ratio which is a measure of the material efficiency in terms of the amount of raw material needed for manufacturing the final part: in contrast with traditional machining methods, which have buy-to-fly ratios between 5 and 20, Additive Manufacturing can achieve values close to one.

This Invited Session is devoted to the applications of the metallic Additive Manufacturing to Aerospace field with the aim to update and connect researchers and industry experts that deal in this topic from an experimental and numerical point of view.

The session welcomes contributions in topology optimization, design for additive manufacturing, optimization of AM processes (Powder Bed Fusion, Direct Energy Deposition, Binder Jetting, etc) for improved mechanical properties, post-processing solutions aimed to improving finish surface and mechanical properties, qualification procedure of additive manufactured metallic components for aerospace applications.