

## Séminaire PIMM

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Amphi A

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# Multi-physics and multi-scale characterization of ageing phenomena in organic matrix composites for aircraft applications

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The present talk collects the main results of a series of research activities – carried out by the authors at the PPRIME Institute, Poitiers, in collaboration with colleagues and PhD students over several years – concerning durability and ageing of organic matrix composites (OMC) for aircraft applications.

The list of discussed topics includes: humid ageing, thermo-oxidation, environmental and “multiphysical” fatigue of OMC. For all these topics, the complex phenomenology related to the interaction of the material with its surrounding environment is emphasized. The unified strategy for the assessment of all these issues involves the employment of multi-physics experimental/numerical coupled methods, applied at several different observation scales.

All the cited topics have a relevance in the context of the aeronautical industry, since aircraft manufacturers foresee the employment of OMC in structural parts undergoing quite severe environmental solicitations.