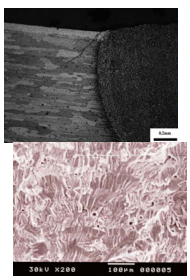
Integral airframes offer improved weight and cost efficiency compared to differential (riveted) structures. Advanced laser beam welded structures offer advantages important to the mechanical performance of the welded structure such as the production of narrow and low distortion heat affected zone (HAZ) and are now used in European civilian aircraft structures. Among other factors affecting weld integrity corrosion damage can be an additional significant cause of the weld's fatigue property degradation when considering the long term operation of an aircraft.

The aim of this work is to investigate the fatigue performance of modern aluminum alloys welds, after exposure to certain corrosion environment. LoM team has collaborated in this work with the research team of Prof. Pantelakis at the Dept. of Mechanical and Aerospace Eng., of the Univ. of Patras.



In the attached files results of this research are presented.

Detailed info are available in the publications:

A. Kermanidis, A.D. Zervaki, G.N. Haidemenopoulos and S. Pantelakis, Effect of Aging and Corrosion on the Fatigue Performance of Laser-Welded Al-Cu-Mg-Ag alloys, Materials and Design, 31 pp. 42–49, 2010.

A. Th. Kermanidis, A.D. Zervaki, G. N. Haidemenopoulos and Sp. G. Pantelakis,

The influence of salt fog exposure on the fatigue performance of alclad 6xxx Aluminum Alloys laser beam welds, Journal of Materials Science, 45 pp. 4390- 4400, 2010.