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VDI

Verein Deutscher Ingenieure
Hamburger Bezirksverein e.V.
Arbeitskreis Luft- und Raumfahrt

Invitation to an RAeS lecture in cooperation with the DGLR and VDI

Fiber Metal Laminate Structures - from Laboratory to Application

Dr. Thomas Beumler,
Senior Expert FML Structures,
Airbus

Lecture
followed by discussion

Entry free !
No registration !



Date: Thursday, 29th October, 18:00
Location: HAW Hamburg
Berliner Tor 5
(Neubau), Hörsaal 01.12

After World War II it was discovered that metal bonding leads to high performance, light weight structures. Dutch researchers at Fokker and the NLR investigated the advantage of metal bonded structures systematically in the 1960's. At Delft University existing Fiber Metal Laminates (FML) were optimized by application of R-glass fiber prepregs between aluminium foils. This laminate, with some fine tuning on both fibers and resin, was transferred from the laboratory status in Delft to industrial application such as GLARE on the A380 aircraft.

Fiber Metal Laminates combine the most valuable metal properties, such as plasticity and electrical conductivity, with composite related properties as for example low density, high tailored strength and fire resistance.

The lecture will provide an overview about selected technical items which have been tackled during the transmission phase from GLARE material property generation and design allowables via manufacturing issues up to the A380 full scale certification test results.

Thomas Beumler graduated in 1987 as an aeronautical engineer and joined MBB (now Airbus) in the structural mechanics department. He specialised in fatigue and damage tolerance and was responsible for A300-600ST (Beluga) fuselage & empennage fatigue design.

He then focused on research & technology and the application of research results to the aircraft and has cooperated with Delft University on FML developments since 1989. He led the technical development of FML structures for the A380 up to and including certification

He obtained his PhD in 2004, on "Certification issues for non-damaged and fatigue-damaged GLARE structures".

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<http://hamburg.dglr.de>
<http://www.raes-hamburg.de>
<http://www.vdi.de/2082.0.html>

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Hamburg
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