CNDE Webinar Presentation
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Characterization of Microtexture Regions in Titanium via Fused NDE Data

Presented by:

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Abstract:

The current nondestructive inspection paradigm of mono-modal testing and signal-over-threshold call criteria is insufficient for characterization of microtexture regions in titanium alloys, which exceeds the capabilities of any single, practical sensing technique that could be deployed to a manufacturing environment for quality control. In this talk, we discuss the development of a data fusion-based solution to microtexture region characterization. The material problem and potential inspection methods are reviewed, and data from selected methods is presented. Then, progress towards the data fusion-based approach is described. Finally, we look to the future of the method and define outstanding challenges that must be solved to enable ultimate application.

Speakers:

Dr. John Wertz is an Aerospace Research Engineer in the Material State Awareness Branch of the Materials and Manufacturing Directorate at AFRL. He received his BS in Aerospace Engineering from The University of Arizona in 2008, followed by MS and PhD degrees in Aeronautical and Astronautical Engineering from The Ohio State University in 2010 and 2013, respectively. His current work within AFRL focuses on fusion of data from multi-modal NDE sensors and integrated sensing for damage detection in composite structures.

Dr. Laura Homa is a Research Mathematician with the Structural Materials Division of the University of Dayton Research Institute. She received her BS in Mathematics from Mount Union College in 2008 and her PhD in Applied Mathematics from Case Western Reserve University in 2013. She joined UDRI in 2016 and is currently an on-site contractor with the Materials State Awareness Branch of the Materials and Manufacturing Directorate at AFRL. Her research focus is on the application of Bayesian methods for inversion to nondestructive evaluation problems.

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