

Optimum 3D Assembly for Lightweight Structures



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Anthony Luscher is an associate professor in the Department of Mechanical and Aerospace Engineering at The Ohio State University. Luscher received his PhD in mechanical engineering from the Rensselaer Polytechnic Institute, Troy, NY in 1995. Prof. Luscher received several awards including the Honda-OSU Partnership Award in 2005, the Boyer Award for Excellence in Teaching Innovation in 2004, the Lumley Research Award and the Lumley Interdisciplinary Research Award in 2002, all from the College of Engineering at The Ohio State University. He also won the Department Teaching Award from the Department of Mechanical Engineering at RPI in 1995.

His research interests include the simulation and development of innovative joining and fastening systems, development of kinematic constraint tools for rating assembly systems, fastenerless joining systems, and the ergonomics and simulation of handheld direct current torque tools.

Abstract

Assembly is the concluding step of manufacturing and is often neglected or considered late in the product development process. This is unfortunate as joining and fastening are key drivers of cost and quality due to their effects on datum formation, tolerances, as well as structural strength and stiffness. Assembly is ideally a two-step process. The first step, often ignored, is creating an attachment strategy in which the type, location, and orientation of all fastening features are determined. The second step is the detailed design of the particular fasteners to be used.

This talk will touch on several innovative computerized tools that have been developed for optimizing the attachment strategy portion of assembly. The author will also include several industrial examples that the author has worked on throughout his career.

Hosted by Professor Marcelo Dapino

Thursday, September 19

11:45am – 1:00pm

Lunch Presentation

E100 Scott Laboratory

