

Is Your Optimization Process Robust Enough?

HyperSizer® from Collier Research ensures integrity from early design to manufacturing.

Whether you are designing and/or manufacturing composite or metallic aircraft, spacecraft, trains, buses or even wind blades, your goal is very clear: Using your materials of choice, create the lightest-weight product at the lowest-possible cost while meeting every strength, performance and safety target in your particular industry. While the word "optimization" is often used these days to describe how such challenges are met, how can you make sure you've arrived at what is truly the best solution?

HyperSizer®, from Collier Research Corporation, was the very first engineering software commercialized by NASA. Born (and still used extensively) in the space agency's zero-failure-tolerance environment, HyperSizer is also employed in Tier 1 and 2 commercial aircraft, UAVs, shipbuilding, and wind turbine blades.

The software works in a continuous

feedback loop with finite element analysis (FEA) to automatically search for composites or metallic solutions that minimize weight while maximizing manufacturability. A typical result of this kind of robust optimization process is a weight reduction of from 20 to 40%, which can have significant impact on manufacturing costs as well as promoting fuel efficiency and achievement of energy targets.

In composites, HyperSizer surveys thousands, and even millions, of design-candidates, evaluating them in a ply-by-ply and even finite element-by-element manner. This quantifies, with great accuracy, the tradeoffs between weight, material system and how the product will be manufactured. Such ongoing reality checks support engineers' creativity, allowing them to

more fully explore the entire design space while providing a "real-world" analysis of the consequences of proposed design changes.

Working out-of-the-box with industry-accepted CAD, FEA and composites tools, HyperSizer serves as the integrated analysis hub, automating all data transfer from start to finish. As the materials used by many industries become increasingly complex, HyperSizer can improve both the efficiency and the integrity of the product development process.



HyperSizer®
Structural Sizing Software

For more information visit:

www.HyperSizer.com

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HyperSizer Structural Optimization Software

One of the early leaders in product optimization software, Collier Research Corporation is the developer of the NASA-originated HyperSizer® structural sizing and design optimization tool for composites and metallic materials. Our mission is to provide the engineering community with a robust, powerful tool that designs the lightest weight structure optimized for producibility.

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