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Endurica Tames Road Loads with New Software Release

Endurica LLC (Findlay, Ohio) announces a new feature in its Endurica CL fatigue solver: automatic block cycle generation. The feature enables users to extract a simplified durability testing schedule (known as a block cycle test) from multi-channel road loads recorded at the testing track. The simplified testing schedule preserves the most essential features of the original road load history, while maintaining the original failure mode and discarding non-critical load history. The capability enables rubber part suppliers to design fatigue tests that execute quickly and that develop realistic damage. It enables car makers to ensure durability under actual driving conditions.

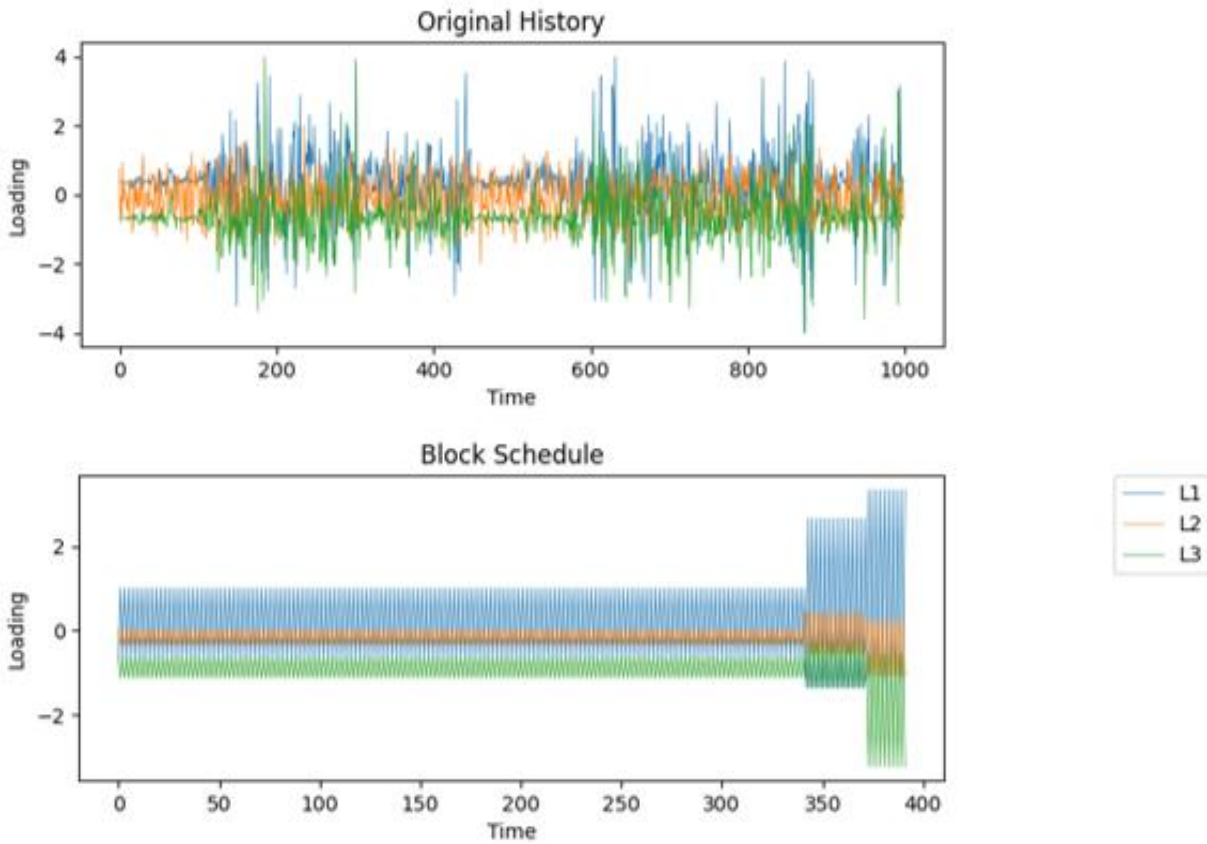
Dr. Will Mars, founder and president of Endurica points out that “we’ve seen some suppliers trying to use fatigue codes written for metals to generate their block cycle schedules. It’s a questionable approach that fails to account for the significant differences between metallic and rubbery behavior.”

Mars continues, “Generating a block cycle schedule the old-fashioned way involves too much hand-waving and guesswork. We often hear frustration with block cycle tests that were generated this way. Too often, they change the failure mode of the part so that the lab test fails to match the field test. Our method uses Critical Plane Analysis. It takes into account rubber’s nonlinear material properties. It calculates a block cycle schedule that preserves the failure mode of the original. We’ve eliminated the guess work.”

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About Endurica LLC

Endurica provides the world’s most comprehensive tools and workflows for fatigue analysis of elastomers. Endurica solutions include simulation software, material characterization services, testing instruments, and training. The company was founded in 2008 and is one of just 38 companies recognized nationally with a 2020 Tibbetts Award as the best of the best in technology research and development by the U.S. Small Business Administration.
(www.endurica.com)



Using the new block cycle generation feature of the Endurica CL fatigue solver, a 3-channel variable amplitude signal recorded at the track (top) can be converted to a block cycle schedule (bottom) that preserves failure mode.

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