

Proposal: A symposium at VHCF9

Symposium Title: Size effect and/or machine learning in very-high-cycle fatigue

Organizers:

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Abstract:

Size effect that causes the reduction of fatigue strength is more severe in very-high-cycle fatigue (VHCF). Size effects can be classified into macro and micro type. Macro type is the effect of specimen or component size on fatigue performance and micro type is the effect of internal defect size on fatigue performance. Machine learning is a newly developed methodology to tackle the difficult problems of data processing and statistical analyses in various fields including fatigue research. Both size effect and machine learning are key issues in VHCF research.

This symposium is focused on size effect and/or machine learning in VHCF. The topics are (but not limited): specimen/component size effect, microstructure/defect size effect, machine learning methods/algorithms, and fatigue strength/life prediction.