The Wöhler Curve Method for a low/medium/high cycle fatigue of metals

xiangqiao yan[1]

[1]Harbin Institute of Technology

January 23, 2023

Abstract

Recently, the author specifically concerned with for low-cycle fatigue (LCF) of metals. An attempt was made that the well-known Wöhler Curve Method was used to perform LCF assessment of metals. From the author's study, it is sure that the Wöhler Curve Method is well suitable for LCF life analysis of metals, in which the *stress-based intensity parameter* calculation is on the basis the *linear-elastic analysis*. In view of the fact that medium/high cycle fatigue lives of metals is well calculated by the Wöhler Curve Method, thus from the author's study it appears to be possible that, for low/medium/high cycle fatigue (LHCF) of metals, the Wöhler Curve Method is well suitable for fatigue life assessment. This study specifically concern with such a subject. By using a number of the fatigue test data of metals from the literature, it has been proven that, in LHCF regime, the Wöhler Curve Method and the generalized Wöhler Curve Method are well suitably used to perform the fatigue life assessment of metals under uniaxial and multiaxial loading, respectively.

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