

Low-Cycle Fatigue Simulation Under Nonisothermal Loading

© Yu.M. Temis, Kh.Kh. Azmetov, A.I. Fakeev

Bauman Moscow State Technical University, Moscow, 105005, Russia,
Baranov Central Institute of Aviation Motor Development, Moscow, 111116, Russia

Thermomechanical model of material and damage model based on cumulated plastic strain are used in the technology of low-cycle fatigue simulation under nonisothermal cyclic elasto-plastic loading. These models and model of “died” elements were used for FEA of cyclic loading of turbine blade both before crack origin time and up to structure failure.

Keywords: *thermomechanical fatigue, cyclic stress-strain loop, “died” elements.*

Yu.M. Temis, Dr. Sci. (Eng.), Professor of “Applied Mathematics” Department of Bauman Moscow State Technical University, Head of the Department of Baranov Central Institute of Aviation Motor Development. e-mail: tejour@ciam.ru

Kh.Kh. Azmetov, Ph.D., Head of a Sector of Baranov Central Institute of Aviation Motor Development, Assoc. Professor of “Applied Mathematics” Department of Bauman Moscow State Technical University.

A.I. Fakeev, Research Assistant of Baranov Central Institute of Aviation Motor Development. e-mail: tejour@ciam.ru