

# LAWS OF LIFE DISPERSION AND STATISTICAL ESTIMATION OF LIFE DISTRIBUTION BOUNDARIES AS APPLIED TO AVIATION ENGINE LPC DISKS

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The fatigue life variation coefficients versus its base were obtained on the basis of statistic processing of titanium disks test and operation results. The lower boundaries of the D-30 and D-30KU engines' LPC stage 1 disk life distribution in the area of fillets of dovetailed grooves were determined.

*Low-cycle fatigue, fatigue life dispersion, variation coefficients, level of confidence*

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## References

1. A.A Shanyavsky. Safe fatigue failure of aviation structure elements. Sinergetics in engineering applications. Ufa, monograph, 2003. – 803pp.

2. V.V. Kutyrev. Study of stressed state and criteria of strength of compressor disks of titanium alloys//Conversion in engineering industry. 2006, №6, – pp.9-13.

3. V.V. Kutyrev, S.V. Teplova. Laws of low-cycle fatigue dispersion of nickel and titanium

alloys// Conversion in engineering industry. 2008, №1, – pp.42-45.

4. V.V. Kutyrev. Laws of low-cycle fatigue, criteria of strength and prediction of aviation engine disk life// Conversion in engineering industry. 2008, №2, – pp.29-34.

5. V.L. Raikher. Fatigue life dispersion. Lectures. M.LATMES, 2003. – 224p.