THE PHASE CHARACTERISTIC OF FORCE CUTTING AND ITS ROLE IN OCCURRENCE AND DEVELOPMENT OF SELF-OSCILLATIONS AT SHARPENING NOT RIGID DETAILS OF AVIATION ENGINES

© 2008 E. V. Burmistrov, M. N. Basyrov, R. R. GiniyatuIIin

Samara State Aerospace University

Considered the physical nature of the phase characteristic of force cutting. It is proved, that during the process of cutting with occurrence of vibrations, the phase characteristic of force cutting can represent both backlog, and an advance of force cutting in relation to changing thickness of a shear. The data brought influence of value backlog on amplitude of self-oscillations.

Phase, shift, cutting, mark, autooscillations, turning, aircraft engine components

Burmistrov Evgenij Vasiljevich, Candidate of Engineering Science – associate professor of Samara State Aerospace University "Mechanical Material Working" department. E-mail: fdla@ssau.ru. Area of research: vibrations in deep boring processes.

Basyrov Marat Naelevich, student of Samara State Aerospace University. E-mail: fdla@ssau.ru. Area of research: vibrations in deep boring processes.

Giniyatulin Renat Rachidovich, student of Samara State Aerospace University. E-mail: fdla@ssau.ru. Area of research: vibrations in deep boring processes.

References

1. Avdonin G.T. Technological Features Research of the Finish Turning under autooscillations. Thesis for Candidate of Engineering Science. Kuybyshev, 1983.-219pp.

2. Avdonin G.T., Burmistrov E.V., Zharkov I.G. and Markushin E.M. "Cutting Force Phase Response Influence on the Autooscillations Intensity" from High-prefomance Methods of Titanium and Heat-resistant Alloys Machine Working.-Kuybyshev, 1981.– pp.123-129.

3. Zharkov I.G. Vibrations in Edge Tool Treatment. Leningrad: "Mashinostroenie", 1986.-184pp.

4. Kudinov V.A. Machine Tools Dynamics. Moscow, "Mashinostroenie", 1974, -360pp.

5. Ota K and Kono N. "Of machine or work piece self-excited vibrations caused by regenerative influence of mark and lagging" from Design and Technology of Machinery Construction. Moscow: "Mir", 1974.- pp.246-257.

6. Voronov E.N. Productivity and finish improvement of high-tensile and corrosion-resistant steel and titanium alloy details by enhancing the vibration resistance parameters and small-gaged drills reliability. Thesis for Candidate of Engineering Science. Kuybyshev, 1986.-216pp.