
Analysis of stock removal influence on free-formed detail eigen forms and eigen frequencies

© S.A. Voronov, I.A. Kiselev

Bauman Moscow State Technical University, Moscow, 105005, Russia

5-axis milling operations are widely spread in contemporary machinery, especially while processing the turbine blades or other free form surfaces. As the vibrations inevitably arise during milling process they can considerably impair the machined surface quality. Therefore it is necessary to select appropriate milling parameters applying the developed numerical models of 5-axis milling dynamics. A new algorithm is considered in the paper. It takes into account the dynamic characteristics variation while stock removal and is embedded into the whole numerical model. The analysis of stock removal influence on eigen frequencies and eigen modes of free-formed work piece vibrations is also considered in the paper.

Keywords: *5-axis milling, milling dynamics, finite element method, stock removal, stock eigen frequencies.*

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Voronov S.A. (b. 1953) graduated from Bauman Moscow Higher Technical School in 1976. Dr. Sci., professor of the Applied Mechanics Department, director of the Scientific Research Institute for Production Automation of Bauman Moscow State Technical University. Author of more than 50 publications in the field of solid body mechanics, cutting process dynamics, simulation of complex dynamic processes. e-mail: voronovsa@yahoo.com

Kiselev I.A. (b. 1988) graduated from Bauman Moscow State Technical University in 2010. Ph.D., assistant lecturer of the Applied Mechanics Department at Bauman MSTU. Author of 17 publications. His scientific interests include problems of numerical modeling in the fields of mechanics, development of parallel computing software, methods of optimal designing. e-mail: i.a.kiselev@yandex.ru
