

Accepted Manuscript

An analytical force mode applied to three-dimensional turning based on a predictive machining theory

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PII: S0020-7403(17)32175-6
DOI: [10.1016/j.ijmecsci.2017.12.021](https://doi.org/10.1016/j.ijmecsci.2017.12.021)
Reference: MS 4085



To appear in: *International Journal of Mechanical Sciences*

Received date: 7 August 2017
Revised date: 24 November 2017
Accepted date: 10 December 2017

Please cite this article as: Zhongtao Fu , Xubing Chen , Jincheng Mao , Tao Xiong , An analytical force mode applied to three-dimensional turning based on a predictive machining theory, *International Journal of Mechanical Sciences* (2017), doi: [10.1016/j.ijmecsci.2017.12.021](https://doi.org/10.1016/j.ijmecsci.2017.12.021)

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Highlights

- An analytical force model for three-dimensional turning is proposed based on a predictive machining theory.
- Detailed analysis of tool geometry and related parameters are studied.
- The effects of tool geometry and cutting parameters on the global and local chip flow angles and cutting forces are investigated.
- The data of cutting forces obtained from the proposed analytical model and the experiments are in good agreement.

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