

# Accepted Manuscript

Stability of lateral vibration in robotic rotary ultrasonic drilling

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PII: S0020-7403(18)30966-4  
DOI: [10.1016/j.ijmecsci.2018.07.004](https://doi.org/10.1016/j.ijmecsci.2018.07.004)  
Reference: MS 4412



To appear in: *International Journal of Mechanical Sciences*

Received date: 26 March 2018  
Revised date: 19 June 2018  
Accepted date: 3 July 2018

Please cite this article as: Song Dong , Kan Zheng , Wenhe Liao , Stability of lateral vibration in robotic rotary ultrasonic drilling, *International Journal of Mechanical Sciences* (2018), doi: [10.1016/j.ijmecsci.2018.07.004](https://doi.org/10.1016/j.ijmecsci.2018.07.004)

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**Highlights**

- The robotic rotary ultrasonic drilling (RRUD) technology is proposed firstly.
- The dynamic model to compute the stability lobe for RRUD is developed. Dynamic properties of robot, drilling bit parameters and RRUD processing parameters are taken into consideration in it.
- Pilot experiments are conducted and the results indicate that this stability lobe diagrams agree well with the experimental results.

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