Abstract

This paper presents a Kalman filter designed for a cutting force measurement system. The cutting force measurement system is used to measure cutting forces for meso-milling applications. Due to the small magnitude of the cutting forces generated from the meso-milling process, the measurement results are easily distorted by the noise that exists in the measurement system. The object of the Kalman filter design is to reduce the noise influence and obtain accurate cutting force measurement information for the meso-milling applications. The Kalman filter is designed based on an oscillation process model due to the oscillation characteristic of the cutting forces experienced in the meso-milling process.

References

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Index Terms

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Keywords

Kalman filter, cutting force measurement, signal filtering, noise reduction