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The Wear Recognition on Guide Surface Based on the Feature of Radar Graph

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Abstract : Abstract: In order to solve the wear recognition problem of the machine tool guide surface, a new machine tool guide surface recognition method based on the radar-graph barycentre feature is presented in this paper. Firstly, the gray mean value, skewness, projection variance, flat degrees and kurtosis features of the guide surface image data are defined as primary characteristics. Secondly, data Visualization technology based on radar graph is used. The visual barycentre graphical feature is demonstrated based on the radar plot of multi-dimensional data. Thirdly, a classifier based on the support vector machine technology is used, the radar-graph barycentre feature and wear original feature are put into the classifier separately for classification and comparative analysis of classification and experiment results. The calculation and experimental results show that the method based on the radar-graph barycentre feature can detect the guide surface effectively.

Keywords : guide surface, wear defects, feature extraction, data visualization
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