Dynamics Analysis and Simulation of Roll Grinder Components

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This essay aims to identify the composite motion and the cutting force between the grinding wheel and roller of the roll grinder. Based on the analysis of roll grinding mechanism, this essay further uses Newton's law which describes linear motion and Euler equation which describes rotation to build rolling components' Newton-Euler dynamics equation. Then the essay simplifies rolling components' virtual prototype, and uses the dynamic analysis function of ADAMS to do dynamics simulation analysis of rolling components. Finally, based on the formula to calculate grinding force, this essay testifies that calculated results are consistent with simulation results, thus providing reference data for optimization.

Keywords: Rroll grinder, Rimulation, Dynamics analysis, ADAMS

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