

# **A REVIEW ON REAL-TIME SIMULATION OF CNC MACHINE TOOL DYNAMICS**

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## **ABSTRACT**

This paper is an endeavour to critically appraise the existing methods used for real-time simulation of machine tool dynamics with the emphasis on modelling and simulation of the dynamic behaviour of CNC machine tool feed drives and mechatronic systems for machine tools. The actual approaches for linking the feed drive models with structural models for CNC machine tools are examined. Also the feasibility of using the multidisciplinary approach employing the concepts of virtual machine tools and virtual machining into the design and control processes related to manufacturing process is analysed.

**KEYWORDS:** Computer Numerical Control (CNC), Feed Drive System, Hardware in the Loop, Machine Tool, Mechatronic, Motion Control, Simulation