Abstract:
Unwanted relative vibrations between the tool and the workpiece represent significant challenges in high-speed machining. In order to avoid this problem, one needs to specify ranges for system parameters (spindle speed, depth of cut) for which the process is stable, i.e., to obtain a so-called stability chart. Such stability charts usually can only be given by numerical means which is illustrated in the paper for a single degree of freedom model of milling. In this paper, we establish the convergence of the semi-discretization approximation method for a class of delay equations modeling the milling process. Moreover, we show that semi-discretization preserves asymptotic stability of the original equation, thus it can be used to obtain good approximations for the stability charts.

Date: Tuesday, October 05, 2004

Time: 2:00 PM
Coffee will be served in ECSN 3.106 at 1:30 p.m.

Room: GR 2.510

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NOTE: Please contact Lorre Antoine at lantoine@utdallas.edu or (972)883-2161 or by FAX at (972)883-6622 for up-to-date seminar information if you want to receive e-mail notices.