CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, November 15
3:00 – 4:00 PM
Maria Sanford, Room 101

AN INVESTIGATION
OF MACHINING TIME REDUCTION
IN CNC 2D MILLING OPERATIONS

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(MA in Mathematics Thesis Presentation)

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Abstract: We design simple geometric modification schemes of CNC machine tool trajectories for the purpose of machining time optimization. The trajectories considered are tangent continuous sequences of circular arcs and line segments with prescribed tangents at the transition points or at the end points. In two of the three cases considered, the numerical computations of optimal times do not suggest a simple predicting criterion for the ideal location of the transition points within the admissible sets. For the third case we formulate a conjecture supported by the data. All the optimal time are computed under constrains on speed and acceleration of the tool that are typical for machining.