



**The Hong Kong Polytechnic University
Department of Applied Mathematics**

**Seminar
On**

**The Numerical Computation of
the Hamiltonian Schur Form**

by

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Abstract

We introduce a new numerical method for computing the Hamiltonian Schur form of a $2n \times 2n$ Hamiltonian matrix that has no purely imaginary eigenvalues. We demonstrate the properties of the new method by showing its performance for the benchmark collection of continuous-time algebraic Riccati equations. Despite the fact that no complete error analysis for the method is yet available, the numerical results indicate that if no eigenvalues of M are close to the imaginary axis then the method computes the exact Hamiltonian Schur form of a nearby Hamiltonian matrix and thus is numerically strongly backward stable. The new method is also of complexity $O(n^3)$

Date : 4 October, 2007 (Thursday)
Time : 4:30 – 5:30 p.m.
**Venue : Departmental Conference Room HJ610
The Hong Kong Polytechnic University**

*** * * ALL ARE WELCOME * * ***