College of Science and Technology

Topics in Applied and Computational Science

Announcing

A COS 740 Seminar
Friday, September 7, 2007 at 2:00 pm
SH 303

at The University of Southern Mississippi

Speaker: John Perry
The University of Southern Mississippi

Title: From Gauss to Groebner Bases

Abstract:

In high school we learn to analyze the solutions of a system of linear polynomials using Gaussian elimination, which provides a nice, "triangular" form for the system. How do we find a nice, "triangular" form for systems of *non*-linear polynomials? Buchberger's algorithm produces a nice form called a *Gröbner basis*. One can analyze this form much as the triangular form of a linear system.

This talk presents Gröbner bases as a non-linear generalization of echelon form. It describes major algorithms to compute Gröbner bases, indicates some applications, describes challenges in their computation, and concludes with some recent advances.

Further Information

Further details and information about this and other departmental activities is available online at http://www.math.usm.edu/bulletin_board/.