

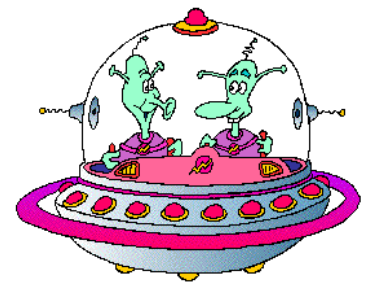
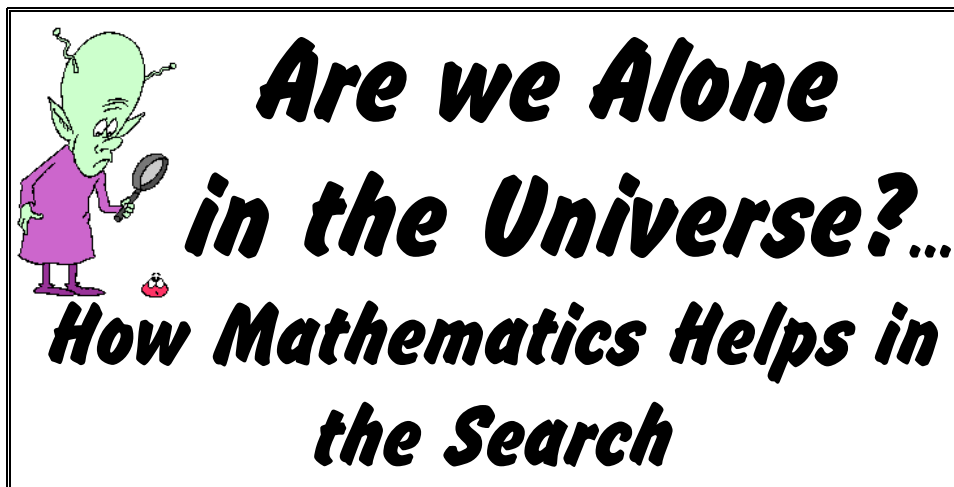


Arizona State University
Department of Mathematics and Statistics

Colloquium

Robert Vanderbei

Princeton University



Abstract:

In this talk, I will discuss two application areas for optimization that I have been interested in recently.

First, I will describe how optimization proves to be useful in discovering new orbits for the n -body problem. In particular, I will discuss and illustrate the recently popular choreographic solutions in which all the bodies have the same mass and trace out the same orbit.

The second area is in optical design. Currently, various design concepts are being investigated for NASA's Terrestrial Planet Finder (TPF) space telescope which is slated for launch sometime in the middle of the next decade. High contrast imaging is the main issue for resolving terrestrial planets. One promising concept is a visible light coronagraph in which obscuring diffraction is controlled by appropriately shaping the telescope's entrance pupil. I will show how modern optimization plays a crucial role in designing appropriately shaped pupils.

3:40 P.M.

Wednesday, October 27

PSF 123

Refreshments will be served at 3:15 in PSA 206.