Department of Mathematics
University of Mississippi

Analysis Seminar
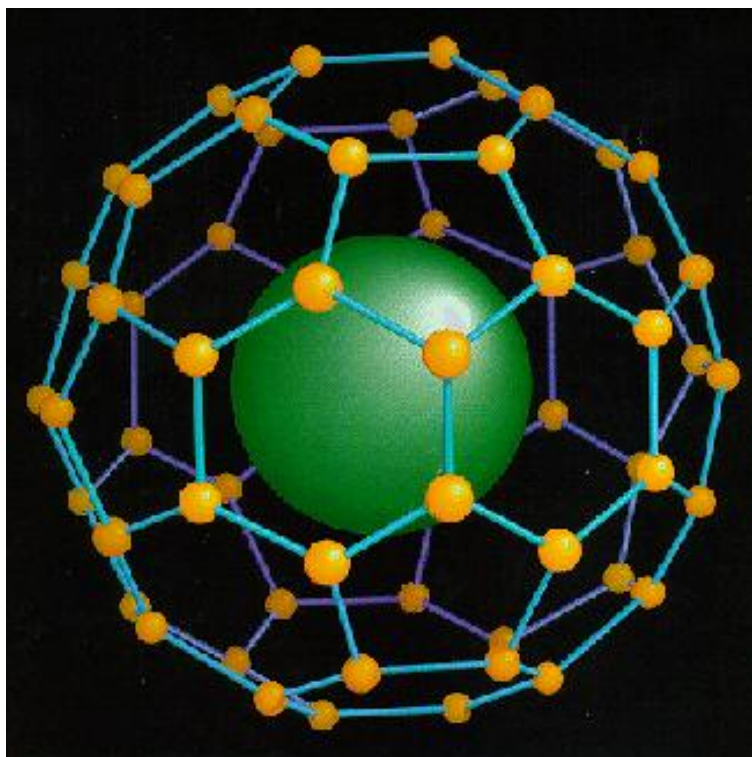
Friday, October 10, 2008 at 2:00 pm
In Hume 331

Electrons, Buckyballs, and Orifices: Nature's Way of Minimizing Energy

Dr. Peter Dragnev

Indiana-Purdue University, Fort Wayne, Indiana

Abstract

The "uniform" distribution of many points on the unit sphere is highly non-trivial problem with applications throughout the whole spectrum of modern science. Whether one studies electrons in equilibrium from Physics, large fullerene compounds from Chemistry, orifices of pollen grain from Biology, or data encoding from Computer Science, one arrives at spherical arrangements of points that minimize some energy functional. In this talk we shall make a short survey of the various problems in the literature and will focus on the separation properties of the extremal configurations and related minimal energy problems.

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