

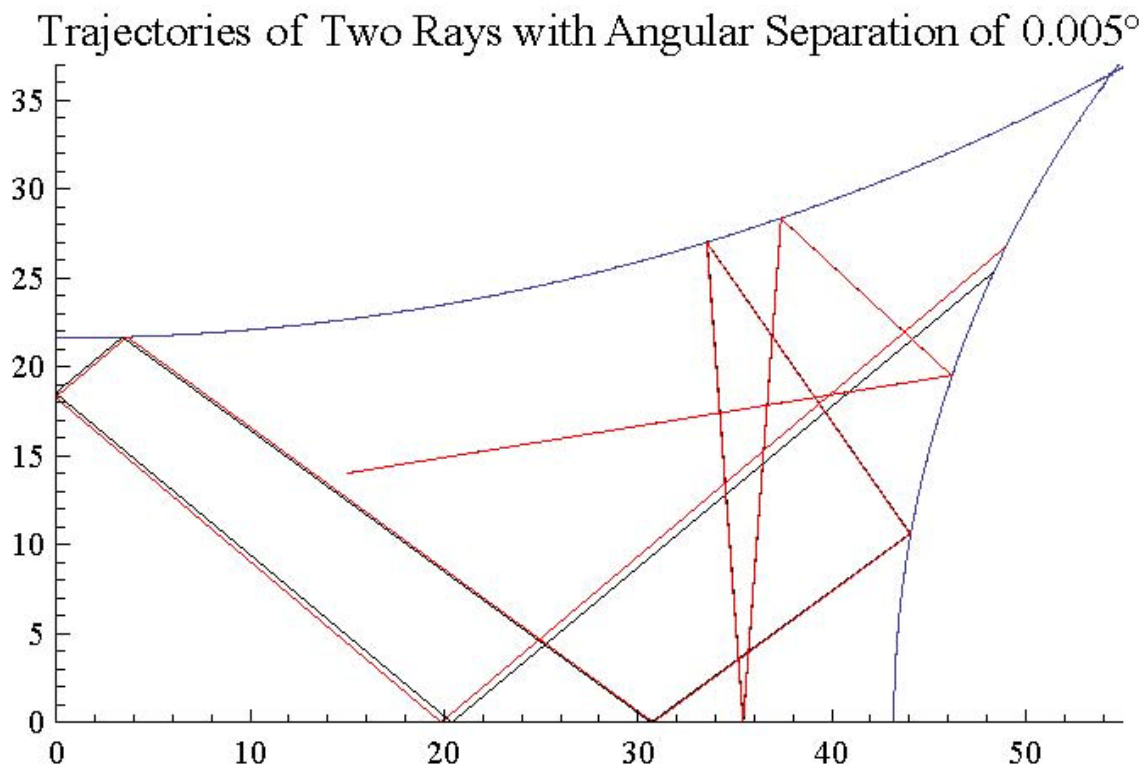
# Physics Student Seminar

Wednesday 4/13/2011, 4:30 pm  
Science & Engineering Building Auditorium

Charles G. Mood

Computational Science & Physics

## A Computational Model of a Wave Chaotic Microwave Resonance Cavity



A two-dimensional microwave resonance cavity in the shape of a quarter bowtie exhibits wave chaotic behavior due to its irregular boundary. As a result of this behavior, the cavity is a classical analogy to systems such as a quantum dot. To understand the dynamics of this system, the eigenmodes of its electric field must be explored. However, due to the irregular shape of the boundary of the quarter bowtie, traditional eigenmode analysis cannot be applied. A variety of methods were explored to overcome this obstacle and generate a computational model for the simulation of this system. These methods will be discussed along with results from the simulation showing eigenmodes of the cavity.

*Please join us for light refreshments at 4:15pm outside SEB 203.*