Department of Physics Colloquium

Wednesday, March 19th at 4:00 p.m. / SH 121

Pre-Colloquium at 3:30 p.m. / SH 108

Could Ball Lightning Be Magnetic Monopoles?

Speaker: Dr. Karl D. Stephan

Abstract:

Ball lightning is an enigmatic atmospheric phenomenon that has been witnessed by thousands of people. The nature of the energy source for ball lightning's light emission is unknown, and no one has either devised a satisfactory theory to explain it or succeeded in duplicating its essential characteristics in the laboratory.

In this talk we explore the possibility that ball lightning may be powered by decaying magnetic monopoles. Although there is no definitive experimental evidence for the existence of magnetic monopoles, they are among the most sought-after undiscovered particles in physics. We will show how the magnetic-monopole-decay theory can account for several paradoxical characteristics of ball lightning, and will propose some experimental and observational programs based on this idea.