

UNL Department of Physics and Astronomy presents:

Interaction of Electrons and Positronium Atoms and with Atomic and Molecular Targets and Laser Fields: Having Fun with Classical and Quantum Mechanics

PRESENTED BY
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4:00 PM
IN JH 136

Refreshments will be served in the JH 1st Floor Vending Area at 3:30

ABSTRACT

The old Bohr correspondence principle is still working very well in solving nowadays problems in atomic and molecular physics. In this talk I will discuss a whole range of problems, including the hydrogen/antihydrogen formation in collisions of positronium atoms with protons/antiprotons, laser-assisted electron recombination processes and positronium collisions with atoms and molecules. Some of these problems require the tools of modern quantum mechanics, but some can be solved using classical and semiclassical methods due to remarkable properties of the Coulomb interaction. The processes which will be discussed are important in many interdisciplinary fields, particular in developments of methods for antihydrogen formation, in physics of the upper atmosphere and the physics of early universe.