Tuesday, May 7th At 3:45pm

The Strong-Focusing Cyclotron: high-current 100 MeV accelerator for protons and ions

Abstract:

The Strong Focusing Cyclotron (SFC) makes it possible to accelerate continuous beams of protons or ions to 100 MeV energy with beam current of ~10 mA. It is a sector isochronous cyclotron in which high-gradient cavities between the sectors provide sufficient energy gain per turn to fully separate all orbits. F-D quadrupole doublets are located in the aperture of each sector dipole to provide strong focusing of the bunches as they traverse the spiral orbits. This makes it possible to control the betatron tunes to prevent resonant emittance growth in high-charge bunches.

The SFC uniquely makes possible a number of applications that require multi-mA beam current: a proton driver to produce radioactive ion beams; a proton driver for subcritical fission; synthesis of medical isotopes to replace reactor-driven sources; and neutron spallation sources.

CYCLOTRON COLLOQUIUM

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Dr. Peter McIntyre

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Professor

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Physics and Astronomy

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Texas A&M University

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CYLOTRON INSTITUTE
Room 228

Refreshments will be served at 3:30 pm

TEXAS A&M UNIVERSITY