APR20-2020-000181

Abstract for an Invited Paper
for the APR20 Meeting of
the American Physical Society

Experimental Searches for Time Reversal Violation[1]

WILLIAM SNOW, Indiana Univ - Bloomington

Searches for processes which violate CP or T symmetry address important intellectual issues in nuclear/particle/astrophysics and cosmology. CP/T violation is one of the ingredients needed for the explanation of the baryon asymmetry of the universe within the Sakharov paradigm. In this talk we will concentrate on sensitive searches for CP/T violation in systems involving first-generation particles. The discovery of CP/T violation near present levels of sensitivity in such systems would reveal new physics beyond the Standard Model. The null results from existing experiments already probe certain models of baryogengesis at the electroweak scale, where the thermally-activated electroweak sphaleron processes provide the only known source for B-L violation within the Standard Model.

[1]supported by NSF PHY-1913789, PHY-1828512, PHY-1806757