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Progress of Muonium-Antimuonium Conversion Experiment

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Advances in accelerator technology have led to significant improvements in the quality of muon beams over the past decades. Investigations of the muon and muonium enable precise measurements of fundamental constants, as well as searches for new physics beyond the Standard Model. The spontaneous conversion of muonium to antimuonium is an interesting charged lepton flavor violation phenomenon and serves as a tool to constrain the parameter space beyond the Standard Model. The Muonium-to-Antimuonium Conversion Experiment (MACE) was designed to utilize a high-intensity muon beam, a Michel electron magnetic spectrometer, a positron transport system, and a positron detection system to either discover or constrain this rare process with an unprecedented precision. This talk will present progress of MACE and the related areas.

Primary author: TANG, Jian (Sun Yat-sen University)

Presenter: TANG, Jian (Sun Yat-sen University)

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