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CP Violating Top Yukawa at the Future Muon Collider

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The project studies a CP-violating top Yukawa coupling at a future muon collider. The signal processes include tth , $tth\nu\nu$, and $tbh\mu\nu$ decaying semi-leptonically. Using energies of 1, 3, 10, and 30 TeV, we show cross section dependence on the CP phase and will discuss how different signals dominate at different benchmark energies. Projected bounds on α at 95% CL are presented given the Standard Model case, and we show luminosity required for 5σ discovery and 2σ exclusion for different CP phases.

Author: CASSIDY, Morgan

Presenter: CASSIDY, Morgan

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