UNIVERSITY OF MIAMI
COLLEGE of
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Location: Lago Mar Resort

Affiliation: Carnegie Mellon University

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Recent results from CMS

Abstract

The CMS experiment at the CERN Large Hadron Collider continues to advance our understanding of fundamental particles and their interactions, testing the Standard Model with increasing precision while probing for signs of new physics. This talk will highlight recent results from across the CMS physics program, including precision electroweak measurements of the W boson mass, vector boson scattering, and rare W boson decays. Highlights from top-quark physics will include the observation of toponium and direct measurements of the CKM matrix element |V_cb|. Recent studies of Higgs boson properties and searches for Higgs boson pair production will be presented, providing new constraints on the Higgs boson self-coupling. The talk will also cover searches for physics beyond the Standard Model, focusing on dark matter, long-lived particles, and new heavy resonances. Advances in machine learning, particle reconstruction, and trigger strategies are enabling increasingly sensitive probes of both established and unexplored regions of particle physics.