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Top Quarks and the High Energy Frontier

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One of the still missing pieces of the Standard Model of particle physics is the Higgs boson, providing a mechanism to generate the masses of the particles. Furthermore, there is strong indication that the Standard Model is merely the low energy limit of a more fundamental theory which could manifest itself near the TeV scale. This talk will explore aspects of experimentation at the High Energy frontier, starting from experience at the Tevatron accelerator currently providing the world's highest energy particle collisions. In particular, a precision measurement of the top quark mass using the Collider Detector at Fermilab (CDF) will be presented. An outlook will be given towards a direct search for the Higgs boson and New Physics at the LHC and beyond, concluding with a historic perspective.