ROHINI GODBOLE

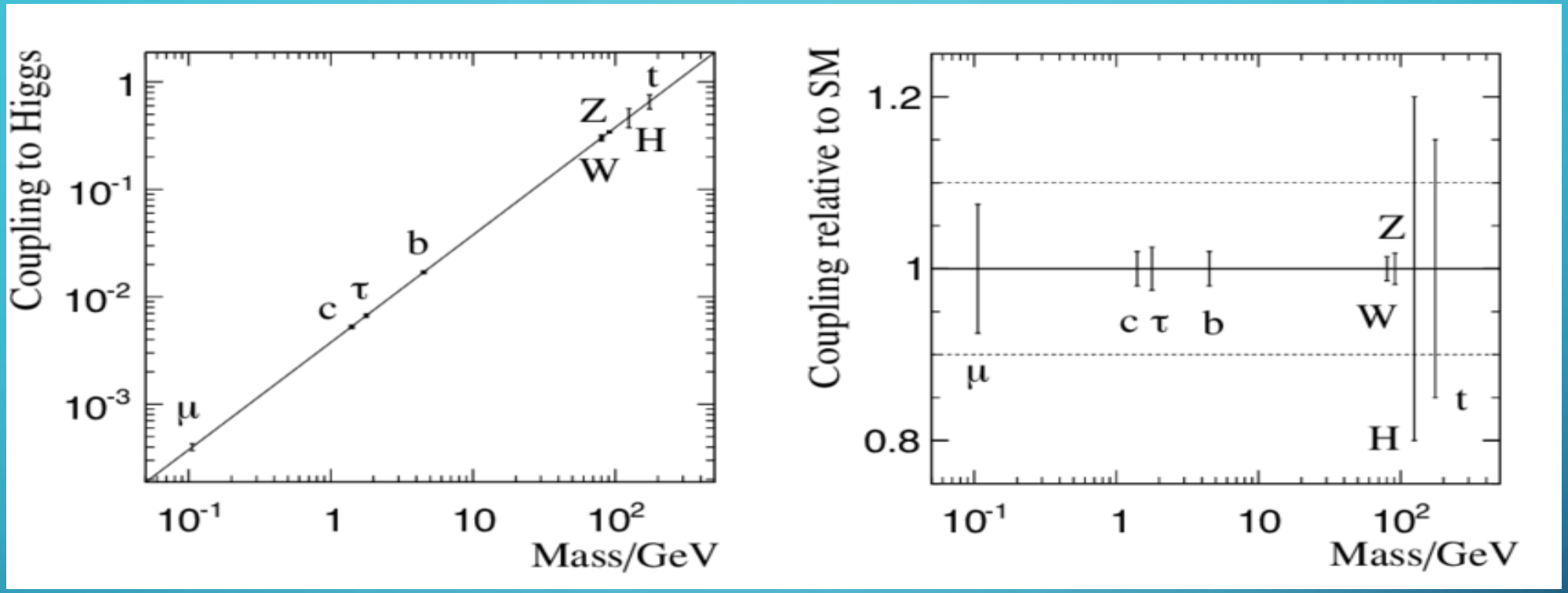
WORK ON COLLIDER

. ROHINI GODBOLE IS A PARTICLE PHYSICIST

Best known for her work at CERN, European Organization for Nuclear Research. Her work on **high energy photons could form the basis for the next generation of particle colliders**, used to study the fabric and composition of the Universe.

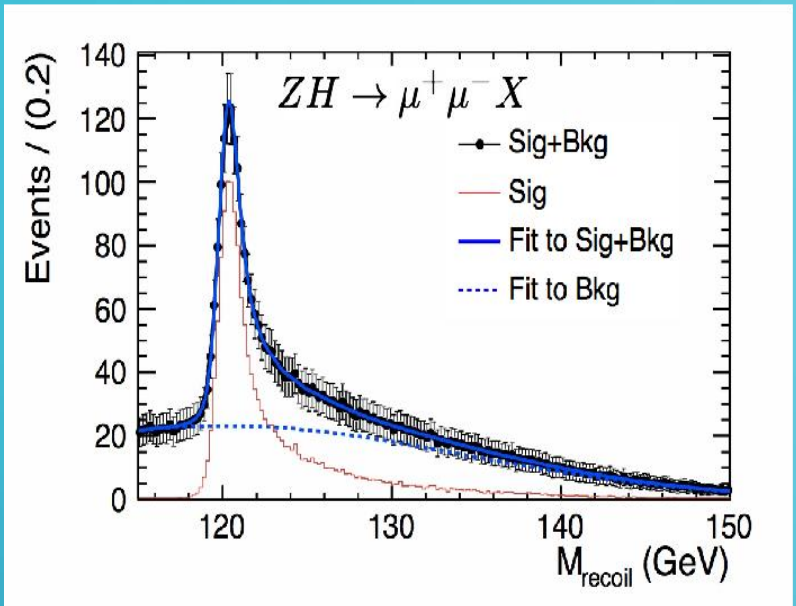
She is today a part of the International Detector Advisory Group for the International Linear Collider (ILC) at CERN, which monitors the design and working of the ILC detector. She is also the Chairperson of the 'Panel for Women in Science' initiative of the Indian Academy of Sciences.

Rohini Madhusudan Godbole works in the field of Particle Physics and Collider Physics & contributed enormously for this field in India. A MSc, Phd, D.Lit & she is a Professor at the IISc, Bangalore. Here receiving Padma Shri from President. The women empowerment

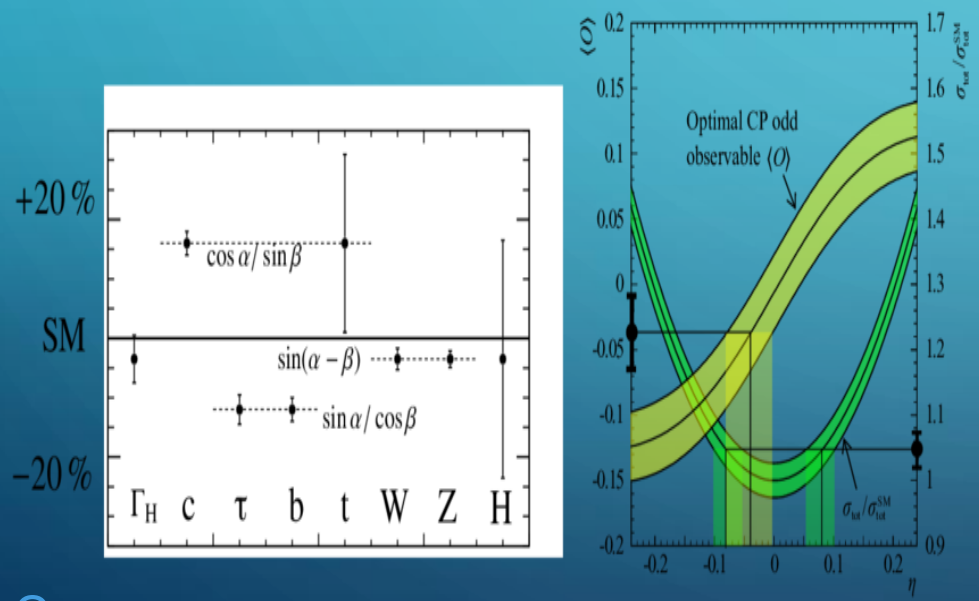


AN ILLUSTRATION OF THE TYPICAL PRECISIONS TO WHICH THE RELATION HIGGS

COUPLINGS TO THE MASSES OF THE PARTICLES CAN BE TESTED AT A LINEAR COLLIDER, ASSUMING OPERATION AT ONE ENERGY POINT BELOW AND ONE ABOVE $\sqrt{S} = 500$ GEV WITH THE INTEGRATED LUMINOSITIES OF TABLE 1. THE ULTIMATE SENSITIVITY WILL DEPEND ON THE PRECISE INTEGRATED LUMINOSITY RECORDED AND THE CENTRE-OF-MASS ENERGIES AT WHICH THE LC IS OPERATED. THE TWO PLOTS SHOW THE ABSOLUTE AND RELATIVE PRECISION THAT CAN BE REACHED. THE VALUES SHOWN ASSUME SM COUPLINGS.



The recoil mass distribution for e + e − → ZH → μ + μ − H events with m H = 120 GeV in the ILD detector concept at the ILC [6]. The numbers of events correspond to 250 fb −1 at √ s = 250 GeV, and the error bars show the expected statistical uncertainties on the individual points



Left: Typical deviations of the Higgs couplings to different particles from the SM predictions in a Two-Higgs-Doublet model. The LC precisions for the various couplings are the same as in Figure 3. Right: Determination of the admixture η of a CP-odd state in e + e − → ZH at √ s = 350 GeV with 500 fb −1 , using the measurement of the cross section together with an 'optimally chosen' CP-odd observable.