Contribution ID: **409** Type: **Parallel talk**

Production and electroweak couplings of 3rd generation quarks at the ILC

Saturday 13 July 2019 12:30 (15 minutes)

The 3rd generation quarks are, due to their large mass, highly sensitive probes for new physics connected to the electroweak symmetry breaking. Linear e+e- colliders allow for clean measurements of heavy quark final states between the Z-Pole and the TeV scale with sensitivities to different aspects of the manifestations of new physics in the extracted electroweak couplings. At the same time these processes are ideal benchmarks for the optimisation of detectors at linear colliders. This includes for example the event-by-event distinction between b and anti-b quarks indispensable for the proper measurement of differential observables. The contribution will outline with full simulation studies the capabilities of the ILD concept. An efficiency of 30% has been achieved for the charge measurements in bb final states, which is about a factor three better than presented earlier. We will also present new results using the fully hadronic tt final state. Finally quantitative estimations of the reach in detecting the onset of new physics will be given.

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Session Classification: Top and Electroweak Physics

Track Classification: Top and Electroweak Physics