

Properties of the Higgs Particle

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After the discovery of “Higgs boson”, the study of the nature is going on. In the standard model of particle physics, Higgs boson couples to the top quark most strongly, but the coupling has not been proven yet because the rate to produce the top quarks with Higgs boson is rather small. The coupling is indirectly observed though the Higgs production cross section, because virtually produced top quarks may return to Higgs boson, but there might be the effect of unknown particle contribution as well. Higgs nature is not known precisely, because backgrounds are so high at LHC. The proposed e^+e^- collider, ILC, might bring the crucial information to understand the nature of Higgs boson, and new particles behind it. The ideas to reveal the Higgs nature will be discussed in the school, “The future of collider physics” to be held in July.

