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A combined fit to the Higgs Branching Ratios at ILD

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We introduce here a new method to measure the Higgs decay branching ratios at future e^+e^- Higgs factories, by directly exploiting class numeration. Given the clean environment at a lepton collider, we build an event sample highly enriched in Higgs bosons and essentially unbiased for any decay mode. The sample can be partitioned into categories using event properties linked to the expected Higgs decay modes. The counts per category are used to fit the Higgs branching ratios in a model independent way. The result of the fit is directly the set of branching ratios, independent from any measurement of a Higgs production mode. Special care is given to an appropriate treatment of the statistical uncertainties. In this contribution, the current status of our implementation of this analysis within the ILD concept detector is presented.

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Collaboration / Activity

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