



Weekly

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- Chicago Report <https://indico.cern.ch/event/820586/timetable/?view=standard>
 - width updated, 1.6%

Higgs width



- **Absolute** width measurement by 2 dominant channels:

$$\Gamma_H = \frac{\Gamma_{H \rightarrow ZZ}}{\text{Br}(H \rightarrow ZZ)} \propto \frac{\sigma(ZH)}{\text{Br}(H \rightarrow ZZ)} \quad \text{and} \quad \Gamma_H = \frac{\Gamma_{H \rightarrow bb}}{\text{Br}(H \rightarrow bb)} \propto \frac{\sigma(vvH \rightarrow vvbb)}{\text{Br}(H \rightarrow bb)\text{Br}(H \rightarrow WW)}$$

- ZZ provide ~10% precision.
- In 360GeV, $\sigma(vvH) * \text{Br}(H \rightarrow bb)$: **0.76%** $\sigma(ZH) * \text{Br}(H \rightarrow bb)$: 0.63% correlation -15%.
 - $\text{Br}(H \rightarrow WW)$ ~2% in 360GeV. Add 240GeV 1% result as constrain.
 - Combined fit in 10 κ framework:

$$\Delta(\Gamma_H) \approx \mathbf{1.6\%}$$

- [Twiki: https://twiki.cern.ch/twiki/bin/view/Sandbox/BremFitinForward](https://twiki.cern.ch/twiki/bin/view/Sandbox/BremFitinForward)