

User's requests (I): HiggsBounds

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→ Bounds from Higgs searches at LEP, Tevatron, LHC for any model

Problem: to retain a correct definition of the 95% C.L. limit

Solution: Find the strongest channel, check only this one

User's requests:

- we need observed and expected data
- bounds as model independent as possible (as function of M_H ...)
- in addition SM combination
- results channel by channel (as few mixture as possible)
- if possible: full χ^2 distribution (99.7%, 95%, 68% C.L., ...)

User's requests (II): MasterCode

[*Buchmüller, Cavanaugh, De Roeck, Dolan, Ellis, Flücher, SH, Isidori, Marrouche, Martinez Santos, Olive, Rogerson, Ronga, de Vries, Weiglein*]

→ Fits to (constraint) SUSY models, including **LHC data**

User's requests:

- results in the CMSSM in $(m_0, m_{1/2})$ plane, but for more A_0 , $\tan \beta$ values
- at best: **full χ^2 distribution** (99.7%, 95%, 68% C.L., ...)
but as a function of **all parameters**
- possibilities (and data!) for validation (→ Delphes, ...)
- results in more models that can be relevant (GMSB, AMSB, ...)
⇒ see [hep-ph/1109.3859](https://arxiv.org/abs/hep-ph/1109.3859)