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# DECAY TABLES

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1. The Les Houches Accord (#3).
2. The LHA3 decay table.
3. Discussion.

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DECAY PACKAGE (SDECAY, HDECAY, ..., + MORE?)

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↓ 3. Decay Table

EVENT GENERATOR (PYTHIA, HERWIG, ISAJET, SUSYGEN, ...)

# The LHA3 Decay Table

General: using PDG numbers + comments in a format like:

```
#          PDG          Width          dm
DECAY  1000021  1.01752300e+00  0.000000000+e00  # gluino decays
#          BR          NDA          ID1          ID2
      4.183132700E-02      2      1000001      -1  # BR( g -> ~d_L dbar )
      1.555876400E-02      2      2000001      -1  # BR( g -> ~d_R dbar )
      3.913909700E-02      2      1000002      -2  # BR( g -> ~u_L ubar )
      1.743581800E-02      2      2000002      -2  # BR( g -> ~u_R ubar )
      ...
Block DCINFO          # Program information
      1      SDECAY          # Decay package
      2      1.0          # version number
```

- The PDG numbers are an already defined standard, no point in defining another ( + we couldn't agree on what to call all the sparticles).
- By specifying number of daughters on each line, a free format can be used on read-in, and columns full of zeroes are avoided.
- Comments may be added after a “#” mark anywhere.

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⇒ nothing intrinsically “SUSY” about this decay table.

- For hadrons, the PDG number encodes flavour + spin (and charge).
- When available / necessary, more information may be added either by continuing on same line or by using the “+” character to specify continuation lines.
- So this structure can also be used for hadron decays. **Interest?**

# Discussion

- During the Les Houches meeting and the SUSY Decay Packages session of the MC4LHC workshop, a standard for SUSY model inputs and EW scale spectra has been arrived at, Les Houches Accord #3.
- We also needed a standard for decay tables.
- Since we are doing it anyway, **is there interest outside the SUSY community for such a thing?**