Flavor Les Houches Accord (FLHA)

- A model independent parametrization of flavor related quantities
- A stand-alone flavor output in the FLHA format
- Based on the existing SLHA structure
- Avoiding ambiguities, no double blocks,...

Flavor related quantities

- Masses
- Lifetimes
- Decay constants, form factors
- Wilson coefficients
- CKM matrix
- Flavor observables

Open questions

- SUSY case
  - Dependence on the SUSY parameters
- Wilson coefficients:
  - Orders (LO,NLO and NNLO separately) ?
  - Scale(s)?
- Theoretical errors
- Experimental results
- Block labels

An Example file

```
# SuperIso output in Flavor Les Houches Accord format
Block CALCINFO  # Program information
     1    SUPERISO         # flavor calculator
     2    2.6              # version number
Block MODSEL   # Model selection
     0     1   # Supersymmetry
     1     1   # Minimal supergravity (mSUGRA,CMSSM) model
Block SMINPUTS  # Standard Model inputs
     1     1.27839951e+02   # alpha_em^(-1)
     2     1.16570000e-05   # G_Fermi
     3     1.17200002e-01   # alpha_s(M_Z)
     4     9.11699982e+01   # m_{Z}(pole)
     5     4.19999981e+00   # m_{b}(m_{b})
     6     1.72399994e+02   # m_{top}(pole)
     7     1.77699995e+00   # m_{tau}(pole)
Block MASS  # Mass spectrum in GeV
#PDG code  mass              particle
     3     1.04000000e-01   # s
     4     1.27000000e+00   # c
    24     8.04229965e+01   # W
   211     1.39600000e-01   # pi+
   313     8.91700000e-01   # K*
   321     4.93700000e-01   # K+
   421     1.86484000e+00   # D0
   431     1.96849000e+00   # D_s+
   521     5.27950000e+00   # B+
   531     5.36630000e+00   # B_s
Block LIFE  # Lifetime in sec
#PDG code  lifetime          particle
   211     2.60330000e-08   # pi+
   321     1.23800000e-08   # K+
   431     5.00000000e-13   # D_s+
   521     1.63800000e-12   # B+
   531     1.42500000e-12   # B_s
Block DECONST  # Decay constant in GeV
#PDG code  decay constant    particle
   431     2.41000000e-01   # D_s+
   521     2.00000000e-01   # B+
   531     2.45000000e-01   # B_s
321211     1.18900000e+00   # f_K/f_pi
Block WCOEF1 Q= 1.60846e+02
#Effective Wilson coefficients in the standard basis
#order   number  value
     0     2     1.00000000e+00
     0     7     -1.82057567e-01
     0     8     -1.06651571e-01
     1     1     2.33177662e+01
     1     4     5.29677461e-01
     1     7     1.35373179e-01
     1     8     -6.94496405e-01
     2     1     3.08498153e+02
     2     2     4.91587899e+01
     2     3     -7.01872509e+00
     2     4     1.25624440e+01
     2     5     8.76122785e-01
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    2    6    1.64273022e+00
    2    7    7.05439463e-01
    2    8    -4.65529650e+00Block WCOEF1 Q= 2.34384e+00
#Effective Wilson coefficients in the standard basis
#order   number  value
    0    1    -8.47809531e-01
    0    2    1.06562816e+00
    0    3    -1.34214747e-02
    0    4    -1.29110603e-01
    0    5    1.36343067e-03
    0    6    2.88022278e-03
    0    7    -3.73787589e-01
    0    8    -1.80398551e-01
    1    1    1.52422776e+01
    1    2    -2.13433897e+00
    1    3    9.52880033e-02
    1    4    -4.81776851e-01
    1    5    -2.10727176e-02
    1    6    -1.22929476e-02
    1    7    2.14544819e+00
    1    8    -5.16870265e-01
    2    7    1.98785400e+01
Block WCOEF2 Q= 4.68768e+00
#Effective Wilson coefficients in the traditional basis
#order   number  value
    0    1    -2.96342076e-01
    0    2    1.13282711e+00
    0    3    1.35676427e-02
    0    4    -3.01612009e-02
    0    5    8.50351135e-03
    0    6    -3.83885022e-02
    0    7    -3.25406881e-01
    0    8    -2.12320631e-01
    1    1    5.67840147e+00
    1    2    -2.97971502e+00
    1    3    2.76580432e-01
    1    4    -5.19055769e-01
    1    5    -8.60452704e-02
    1    6    -2.06781370e-01
    1    7    2.01959381e+00
Block FOBS  # Flavor observables
   11     2.97350499e-04   # BR(b->s gamma)
   12     8.25882011e-02   # Delta0(B->K* gamma)
   21     3.46978963e-09   # BR(B_s->mu+ mu-)
   31     1.09699841e-04   # BR(B_u->tau nu)
   32     9.96640362e-01   # R(B_u->tau nu)
   41     6.96556180e-03   # BR(B+->D0 tau nu)
   42     2.97261612e-01   # BR(B+->D0 tau nu)/BR(B+-> D0 e nu)
   51     4.81251996e-02   # BR(D_s->tau nu)
   61     4.96947301e-03   # BR(D_s->mu nu)
   71     6.45414388e-01   # BR(K->mu nu)/BR(pi->mu nu)
   72     9.99985822e-01   # R_l23
Block OOBS  # Other observables
    1     1.93849647e-10   # a_muon
```