Autrans Meeting

Problem: neutral pion mass for $N_f = 2 + 1 + 1$

- neutral pion mass is very light
  - unexpected large mass splitting
  - long autocorelations (though no signs of metastability)
  - effects on physical observables?

Rigorous stragetgy

- we stop!!!

conservative strategy

- accept mass splitting with size as in $N_f = 2$
  - throw away *some* data
  - killer question: *how light can we go at* $\beta = 2.1$ *?*

adventurous strategy

- just live with the light neutral pion
  - check other observables
  - finite size effects (Colangelo, Wu)
  - lattice spacing effects

understand neutral pion mass

- chiral perturbation theory

- add $c_{\rm sw}$
  long project
  - needs imlementation in HMC code
  - needs tuning of parameters

- other actions/ideas that can be tried out?

Super B Physics

- build ETMC subgroup with people interested
- develop a strategy: step scaling, heavy/static-light
- first task: determine needed resources $(48^3 \cdot 96)$

Problem: Kaon too heavy

- start a new set of simulations?
- try reweighing in μ_σ, μ_δ

Problem: analysis of heavy quark sector for $N_f = 2 + 1 + 1$

- unitary setup
  problems with mixings

- mixed setup
  check lattice artfecats

Priorities

- finish simulation $\beta = 2.1$ $N_f = 2 + 1 + 1$
- compute disconnected diagrams
- analytical understanding of neutral pion effects
  a la FR and chiral perturbation theory

$\Rightarrow$ ground for decisions

- analyze Kaon sector at $\beta = 4.2$ $N_f = 2$
- test feasibility of simulations with $N_f = 4$
- one large volume calculation