

Happy

Birthday

Bob and Joan

Current Runs: $a = 0.2 \text{ fm}, 0.13 \text{ fm}, 0.09 \text{ fm}$

first two are done

Auto correlation time: saving config every 6 traj

How many independent configs needed?

Can depend on action, volume

τ = # of time units for indep config

O_F = # of ops for force/site (incl fat link comp)

O_{CG} = # of ops per CG iter per site

N_{CG}^S = # of iterations to solve for s-quark

$$\Delta t = \frac{2}{3} m_\ell$$

$$N_{CG}^L = N_{CG}^S \cdot \frac{m_s}{m_\ell}$$

$$\begin{aligned} \text{Opcount} &= \left(\frac{L}{a}\right)^4 \tau \frac{1}{\Delta t} \left[2O_F + O_{CG} \left(N_{CG}^S + N_{CG}^S \cdot \frac{m_\ell}{m_s} \right) \right] \\ &= \frac{3}{2} \left(\frac{L}{a}\right)^4 \tau \frac{1}{m_\ell} \left[(2O_F + N_{CG}^S O_{CG}) + O_{CG} N_{CG}^S \cdot \frac{m_s}{m_\ell} \right] \end{aligned}$$

Not exactly Richard's form.

What we are doing at $a = 0.09 \text{ fm}$ 2+1 flavors $28^3 \times 96$

$\frac{m_\ell}{m_s}$	$\frac{N \cdot \text{hr} (200 \text{ MF}) / \text{config}}{900}$	$\frac{10^{14} \text{ flops} / \text{config}}{6.5}$
0.4 ms	4096	29.5
0.2 ms	9780	70.4

Lightest mass run $\approx 0.145 \text{ Tf yr}$

Will we need to decrease lattice spacing by $\frac{1}{2}$? $2^6 - 2^8 \Rightarrow 10-37 \text{ Tf yr}$