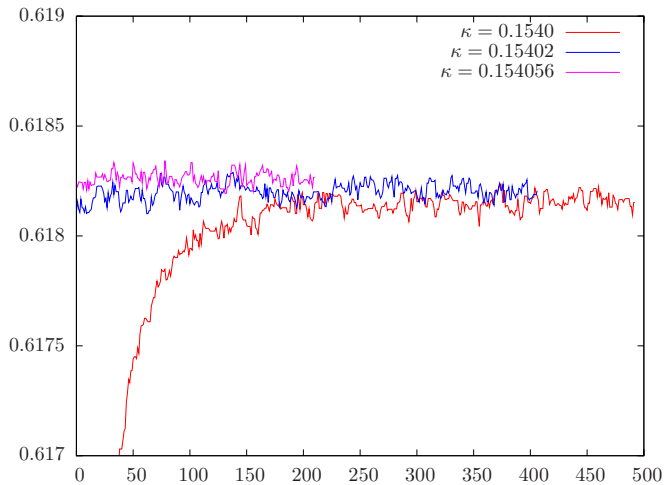


$\beta = 4.2$ runs with $n_f = 2$

β	$a\mu_q$	$L^3 \times T$	κ	m_{PCAC}
4.20	0.0020	$48^3 \times 96$	0.1540	0.0027
4.20	0.0020	$48^3 \times 96$	0.15402	0.0017
4.20	0.0020	$48^3 \times 96$	0.154056	—

$\beta = 4.2$ runs with $n_f = 2$



Inversion and Contraction for $1 + 1$

- ▶ local, smeared or fuzzed quark fields
- ▶ compute usually LL, LS, SL, SS combinations
- ▶ stochastic timeslice sources or point sources
- ▶ e.g. pseudo scalar and scalar

$$\begin{aligned} & -\langle \bar{d}_{\gamma_5} s(t_0) \bar{s}_{\gamma_5} d(t) \rangle, -\langle \bar{d}_{\gamma_5} c(t_0) \bar{c}_{\gamma_5} d(t) \rangle, \\ & -\langle \bar{d}_{\gamma_5} s(t_0) \bar{c}_{\gamma_5} d(t) \rangle, -\langle \bar{d}_{\gamma_5} c(t_0) \bar{s}_{\gamma_5} d(t) \rangle, \\ & \langle \bar{d} s(t_0) \bar{s} d(t) \rangle, \langle \bar{d} c(t_0) \bar{c} d(t) \rangle, \\ & \langle \bar{d} s(t_0) \bar{c} d(t) \rangle, \langle \bar{d} c(t_0) \bar{s} d(t) \rangle, \\ & \langle \bar{d}_{\gamma_5} s(t_0) \bar{s} d(t) \rangle, \langle \bar{d}_{\gamma_5} c(t_0) \bar{c} d(t) \rangle, \\ & \langle \bar{d}_{\gamma_5} s(t_0) \bar{c} d(t) \rangle, \langle \bar{d}_{\gamma_5} c(t_0) \bar{s} d(t) \rangle, \\ & -\langle \bar{d} s(t_0) \bar{s}_{\gamma_5} d(t) \rangle, -\langle \bar{d} c(t_0) \bar{c}_{\gamma_5} d(t) \rangle, \\ & -\langle \bar{d} s(t_0) \bar{c}_{\gamma_5} d(t) \rangle, -\langle \bar{d} c(t_0) \bar{s}_{\gamma_5} d(t) \rangle, \end{aligned}$$



- ▶ available γ -matrix combinations (2pt source-sink) so far:

$$\begin{aligned} &\gamma_5 - \gamma_5, \gamma_5 - \mathbf{1}, \mathbf{1} - \gamma_5, \mathbf{1} - \mathbf{1}, \\ &\gamma_5 - \gamma_0\gamma_5, \gamma_0\gamma_5 - \gamma_5, \gamma_0\gamma_5 - \gamma_0\gamma_5, \gamma_0 - \gamma_0, \\ &\gamma_5 - \gamma_0, \gamma_0 - \gamma_5, \gamma_0\gamma_5 - \gamma_0, \gamma_0 - \gamma_0\gamma_5\gamma_0\gamma_5 - \mathbf{1}, \\ &\mathbf{1} - \gamma_0\gamma_5, \gamma_0 - \mathbf{1}, \mathbf{1} - \gamma_0 \end{aligned}$$

- ▶ *any* other combination can be added in no time
- ▶ list of needed combinations needed