

Discussion session: HVP windows

time-momentum representation → [Bernecker, Meyer, 2011](#)

$$a_{\mu}^{\text{HVP}} = \sum_i \left(\frac{\alpha}{\pi}\right)^2 \int_0^{\infty} dt \tilde{K}(t) G(t) \Theta_i(t)$$

standard Euclidean-time windows → [RBC/UKQCD 2018](#)

$$\Theta_{\text{SD}}(t) = 1 - \Theta(t, t_0, \Delta),$$

$$\Theta_{\text{win}}(t) = \Theta(t, t_0, \Delta) - \Theta(t, t_1, \Delta),$$

$$\Theta_{\text{LD}}(t) = \Theta(t, t_1, \Delta),$$

$$\Theta(t, t', \Delta) = \frac{1}{2} \left(1 + \tanh \frac{t - t'}{\Delta} \right),$$

with $t_0 = 0.4 \text{ fm}$, $t_1 = 1.0 \text{ fm}$, $\Delta = 0.15 \text{ fm}$.

Suggested discussion points

① status review of calculations: light-quark connected vs. full

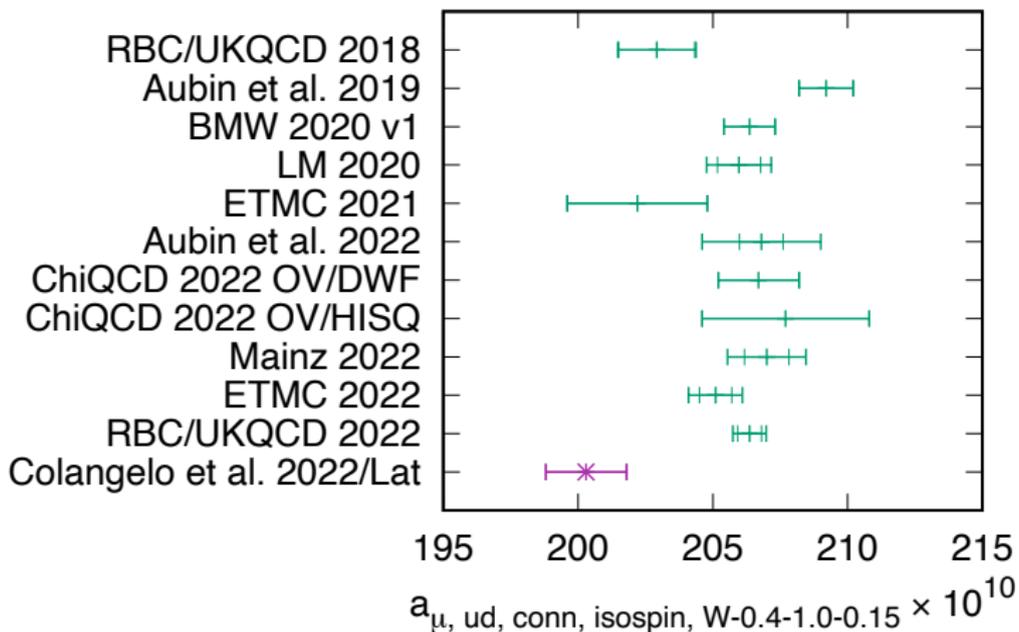
- brief summary statements from collaborations
- additional questions regarding details of calculations

② comparison of lattice results

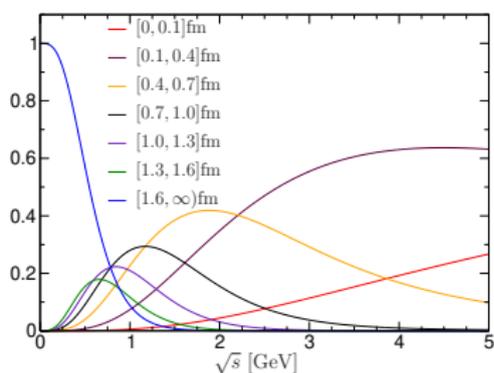
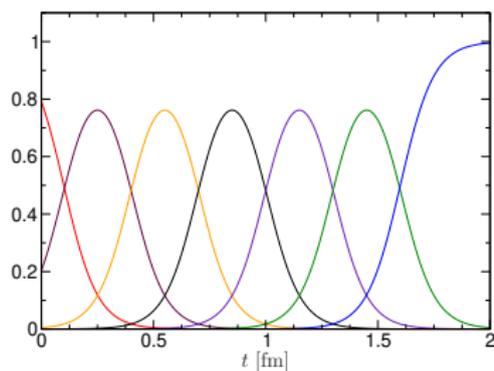
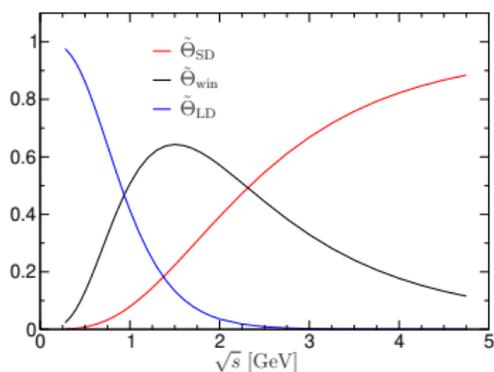
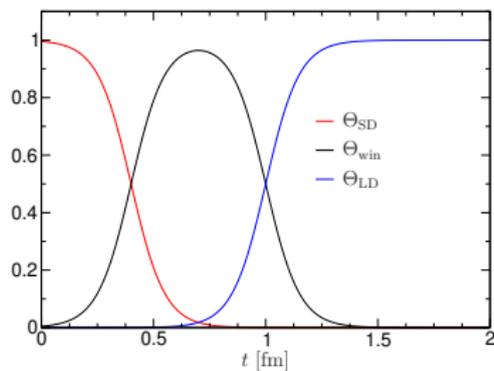
- prescription differences?
- further discussions on isospin limit, different schemes
- what is needed to perform a merging of window results?

③ comparison with R -ratio

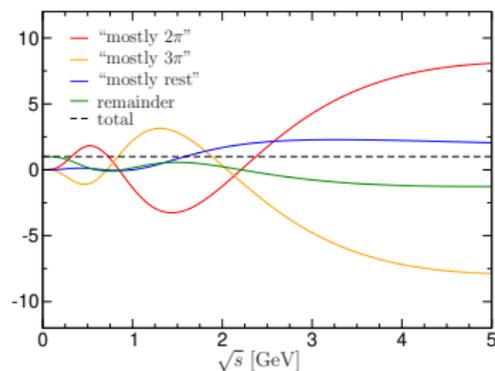
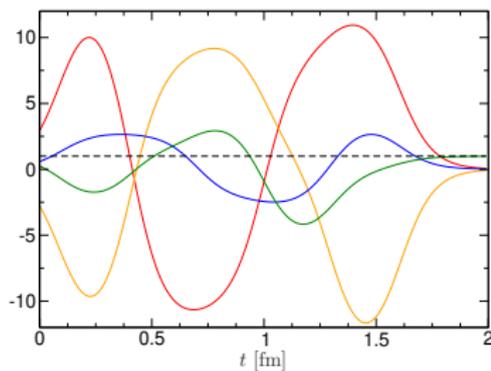
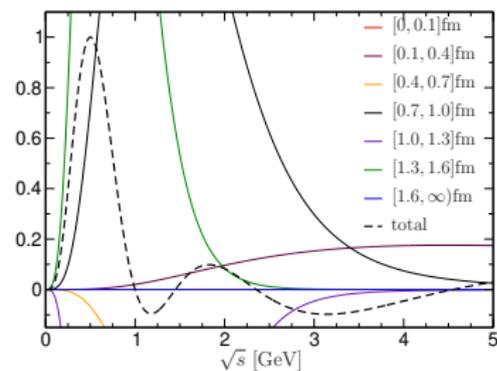
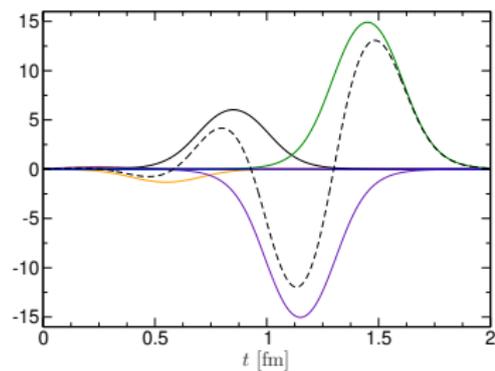
- choices of windows; correlations
- lattice prospects to get the full (physical) windows (all flavors, IB, disconnected...)
- R -ratio windows for all exclusive channels



→ [Christoph Lehner's talk](#)



→ Colangelo et al., PLB 833 (2022) 137313



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