

**ETH** zürich



University of  
Zurich<sup>UZH</sup>

# Zürich Gradient Flow Workshop 2025

Final Discussion

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February 14, 2025

# Workshop Photo



- A true multi-scale problem (?)

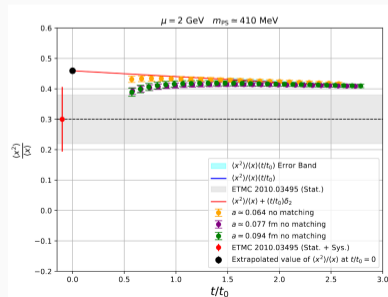
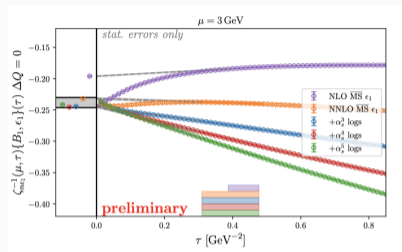
$$a \ll \sqrt{t} \ll \Lambda_{\text{QCD}}^{-1}, \dots \ll L \Rightarrow L/a \gg \gg 1$$

- How can we extend the window?
  - Diagnosis, find the window before the (full) calculation?
  - Accelerate continuum limit?
  - Accelerate  $t \rightarrow 0$  limit?
  - Statistical precision in  $t \rightarrow 0$  limit?
  - ...

- Heavy quarks: consider an expansion

$$a \ll \sqrt{t} \sim m_h^{-1} \ll \Lambda_{\text{QCD}}^{-1}, \dots \ll L$$

instead of usual SFTX?



## Further Questions

- SU(3) with  $N_f = 8$ : implications of the interesting structure
- Lattice artifacts: Do they already pose serious limitations? When do we need  $\mathcal{O}(a^2)$ ?
- Shopping list: What do the lattice physicists want from the perturbative physicists and vice versa?