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Topology density correlator on dynamical domain-wall ensembles with nearly frozen topological charge

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Global topological charge tends to decorrelate very slowly or to even freeze on fine lattice simulations, while local topological fluctuations are expected to survive and lead to correct physical results as long as the volume is large enough. We investigate this issue on the recently generated configurations including dynamical domain-wall fermions at a=0.08 fm and finer. We utilize the Yang-Mills gradient flow to define the topological charge density operator and calculate its long-distance correlation.

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