

Contribution ID: 228 Type: Oral presentation

## Approaching the master-field: Hadronic observables in large volumes

Friday 30 July 2021 05:30 (15 minutes)

The master-field approach to lattice QCD envisions performing calculations on a small number of large-volume gauge-field configurations. Substantial progress has been made recently in the generation of such fields, and this must be joined with measurement strategies that take advantage of the large volume. In this talk, we describe how to compute simple hadronic quantities efficiently and estimate their errors in the master-field approach, *i.e.* by studying cross-correlations of observables on a single configuration. We discuss the scaling of the uncertainty with the volume and compare extractions based on momentum-projected and position-space two-point functions. The latter show promising results, already at intermediate volumes, but come with additional technical complexities such as a more complicated manifestation of boundary effects, which we also address.

**Authors:** Dr CÈ, Marco (CERN); BRUNO, Mattia (CERN); BULAVA, John (DESY, Zeuthen); FRANCIS, Anthony (Universität Bern); FRITZSCH, Patrick (Trinity College Dublin); GREEN, Jeremy R. (CERN); HANSEN, Maxwell T. (The University of Edinburgh); LÜSCHER, Martin (CER & Universität Bern); RAGO, Antonio (University of Plymouth)

**Presenter:** Dr CÈ, Marco (CERN)

Session Classification: Hadron Spectroscopy and Interactions

Track Classification: Hadron Spectroscopy and Interactions