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## Efficient computations of correlators with local distillation

*Tuesday, 1 August 2023 17:00 (20 minutes)*

Distillation has been a useful tool in lattice spectroscopy calculations for more than a decade, enabling the efficient computation of hadron correlation functions. Nevertheless higher-dimensional compact operators such as baryons and tetraquarks pose a computational challenge as the time complexity of the Wick contractions grows exponentially in the number of quarks. This talk introduces a new method of performing Wick contractions efficiently in distillation space by exploiting the locality of smeared hadron sources combined with stochastic sampling procedures. The viability of the algorithm is demonstrated in a computation of  $\Delta$ -baryon and nucleon correlation functions.

### Topical area

Algorithms and Artificial Intelligence

**Primary authors:** Dr PEARDON, Michael (Trinity College Dublin); LANG, Nicolas (University of Valencia, IFIC); EDWARDS, Robert (Jefferson Lab)

**Presenter:** LANG, Nicolas (University of Valencia, IFIC)

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