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## Leveraging Staggered Tessellation for Enhanced Spatial Resolution in High-Granularity Calorimeters

*Tuesday, 7 November 2023 16:30 (15 minutes)*

We present results of a novel design for high-granularity calorimeters, incorporating multi-layered, staggered tessellations to enhance position resolution. Moreover, we introduce HEXPLIT, a sub-cell re-weighting algorithm tailored to harness staggered designs, resulting in additional performance improvements. By combining our proposed staggered design with HEXPLIT, we achieve an approximately twofold enhancement in position resolution for neutrons across a wide energy range, as compared to unstaggered designs. These findings hold the potential to elevate particle-flow performance across various forthcoming facilities. This talk is based on results presented in <https://arxiv.org/abs/2308.06939>

### Early Career

Yes

**Primary authors:** ARRATIA, Miguel (University of California, Riverside); PREINS, Sean (University of California, Riverside)

**Presenter:** PREINS, Sean (University of California, Riverside)

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