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## Early performance assessment of the ThunderX2 processor for lattice based simulations

Enrico Calore<sup>2</sup>, Alessandro Gabbana<sup>1,2</sup>, Fabio Rinaldi<sup>1</sup>, Sebastiano F. Schifano<sup>1,2</sup>,  
Raffaele Tripiccione<sup>1,2</sup>

<sup>1</sup>Università degli Studi di Ferrara, Ferrara, ITALY

<sup>1</sup>INFN Sezione di Ferrara, Ferrara, ITALY

`schifano@fe.infn.it`

This paper presents an early performance assessment of the *ThunderX2*, the most recent Arm-based many-core processor designed for HPC applications. We use as benchmarks well known stencil-based LBM and LQCD algorithms, widely used to study respectively fluid flows, and interaction properties of elementary particles. We run benchmark kernels derived from OpenMP production codes, we measure performance as a function of the number of threads, and evaluate the impact of different choices for data layout. We then analyze our results in the framework of the roofline model, and compare with the performances measured on mainstream Intel Skylake processors.

**Keywords:** High Performance Computing, Performance analysis, Data layouts, Arm processor, ThunderX2, Lattice Boltzmann Methods, Lattice QCD.