Simulation of July 2015 Collimator Scans

August 8, 2016

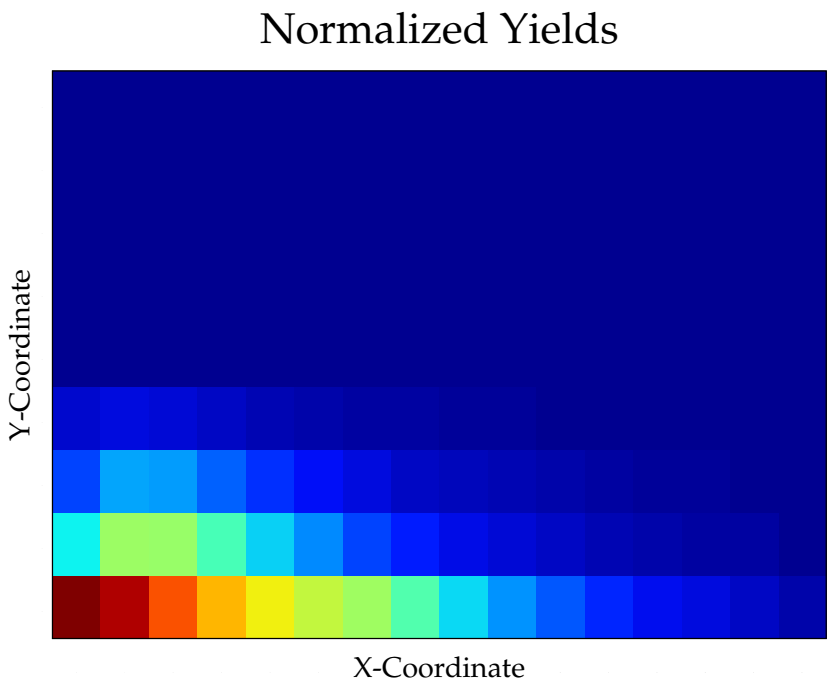
Summary of 2014 slides

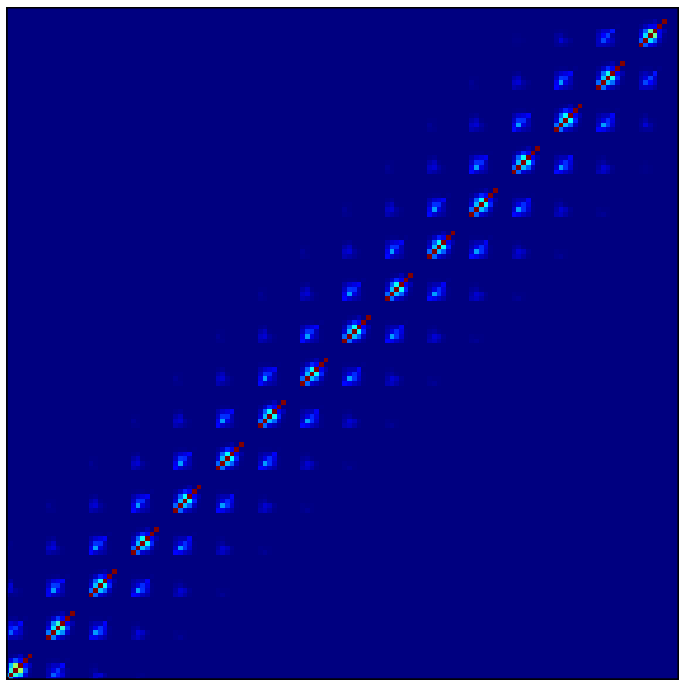
The simulation is weighted and parallel (at UTK).

1. Prepare for simulation:
   - 1.1 Process data from ENDF and PSTAR.
   - 1.2 Process beam scans and monitor signals.
2. Generate $\vec{x}$ and $\vec{v}$.
3. Collimate.
4. Pass into wire chamber and calculate reaction location.
5. Calculate emission angles, propagate, and track particle paths.
6. Accumulate energies according to deposition curves, and sum all quantities such as Ekt and Qkt.
7. End simulation:
   - 7.1 Output some histograms, total weight, yields, and dilution factor.
   - 7.2 Calculate geometry factors, weights, and correlations.

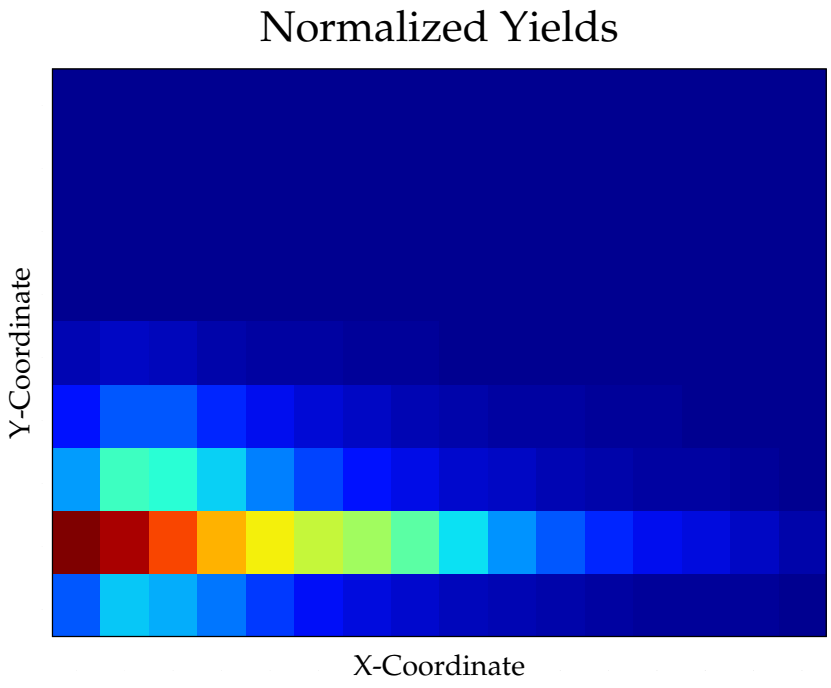
These collimation simulations have 10^7 events each.

Scan 0


Normalized Yields
Y-Coordinate
X-Coordinate


Correlation Values

Scan 1


Normalized Yields
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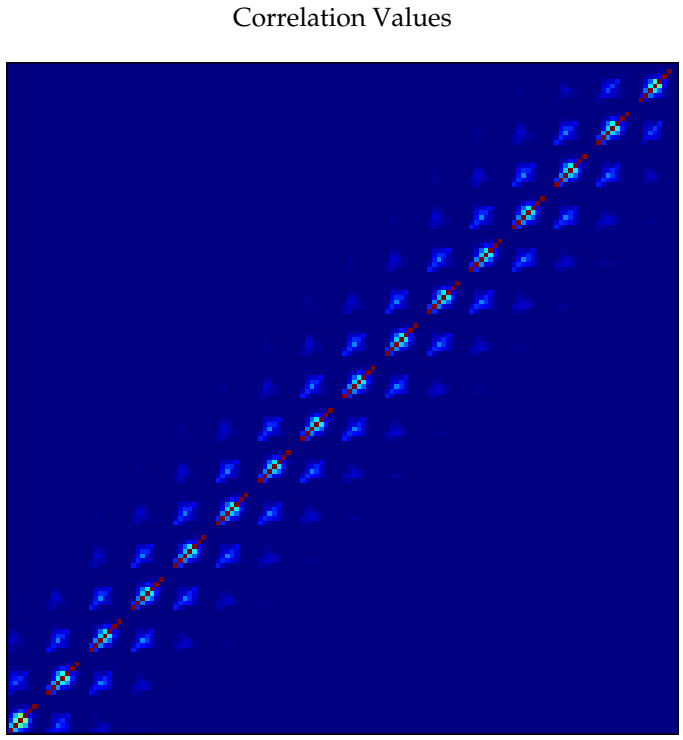
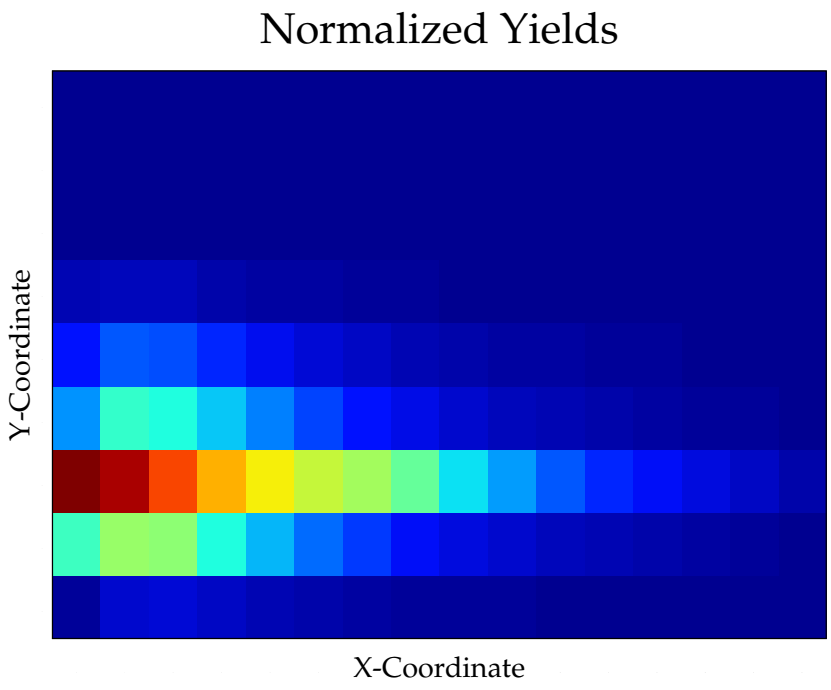
X-Coordinate


Correlation Values

Scan 2


Normalized Yields
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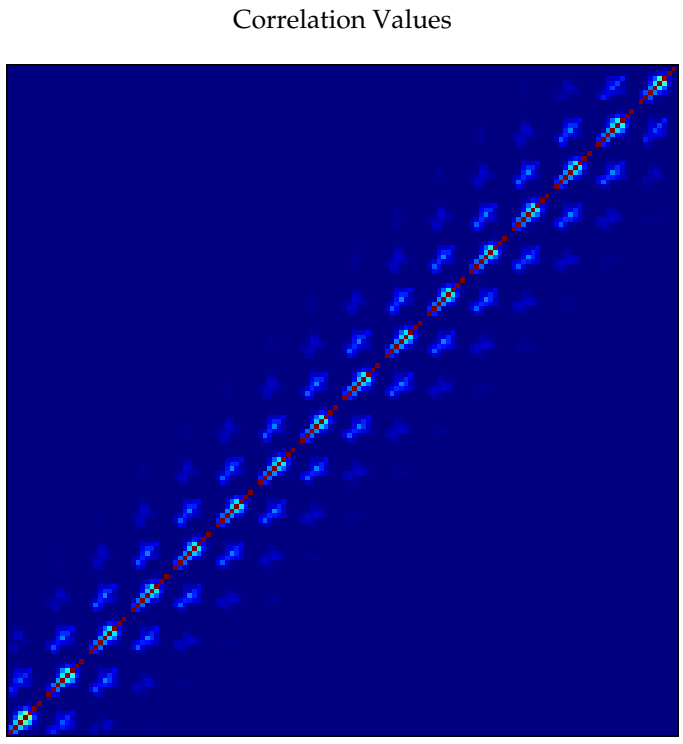
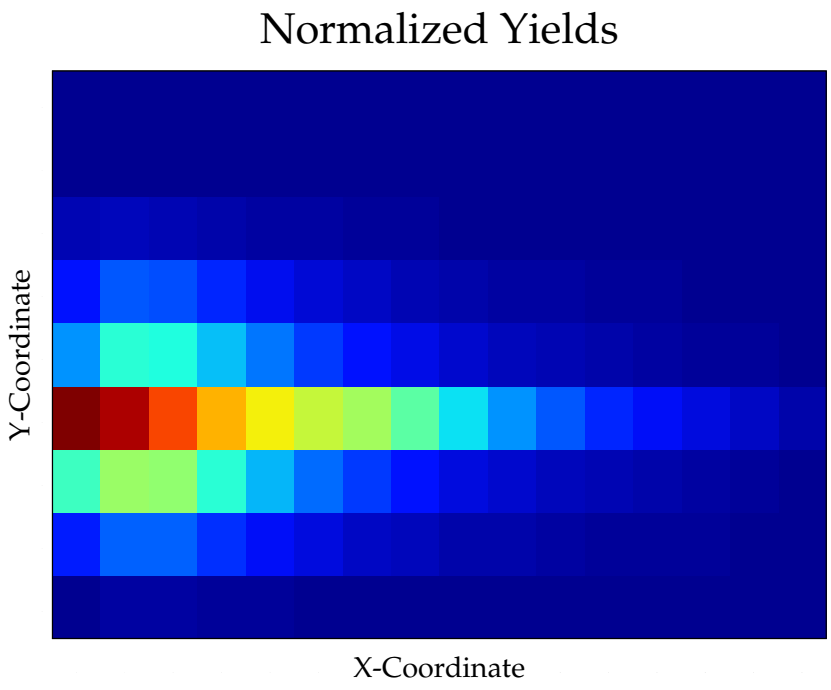
X-Coordinate


Correlation Values

Scan 3


Normalized Yields
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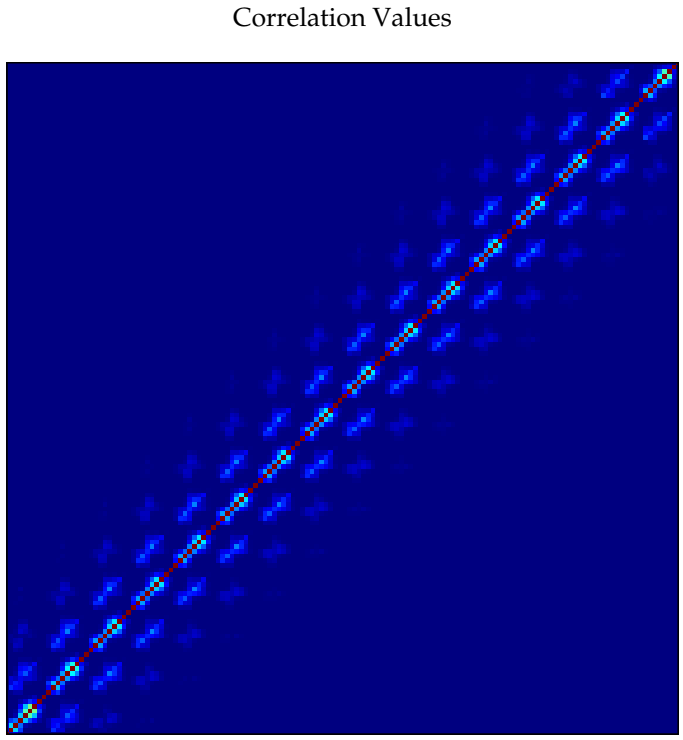
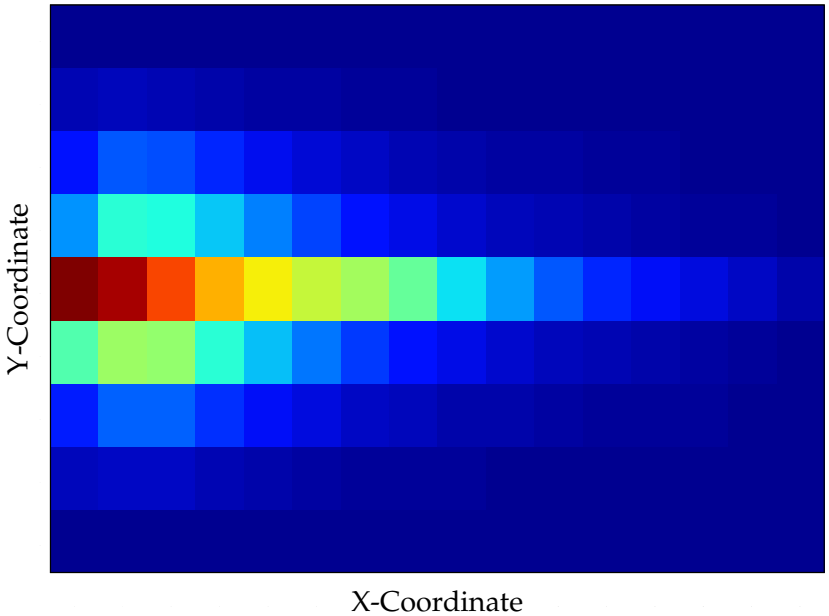
X-Coordinate

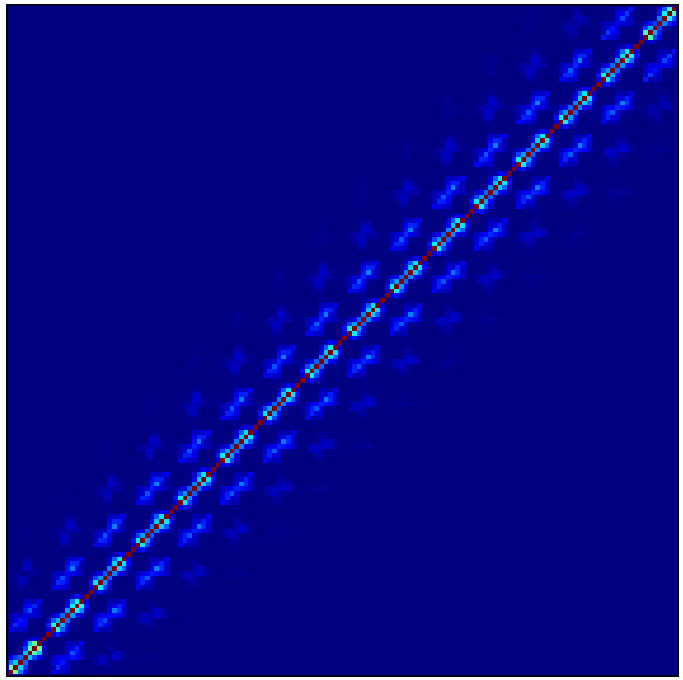

Correlation Values

Scan 4

Normalized Yields

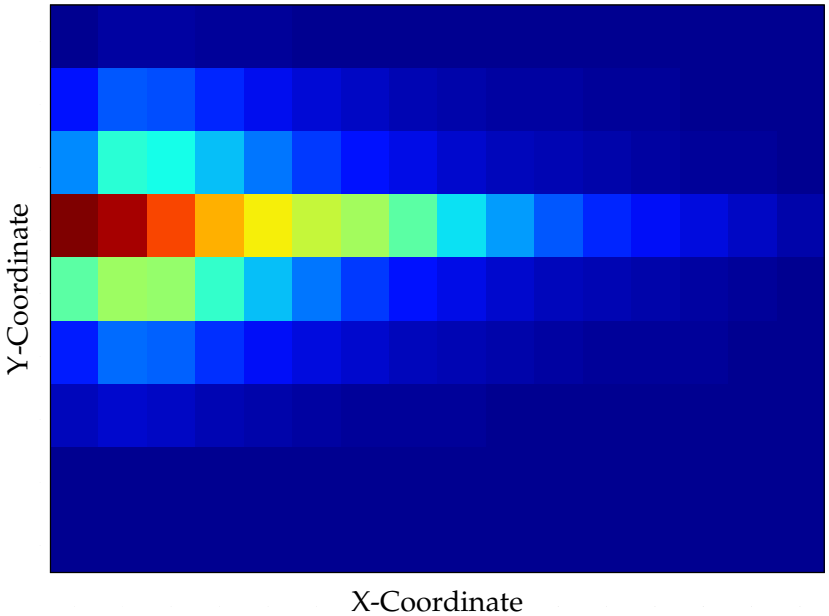


Correlation Values

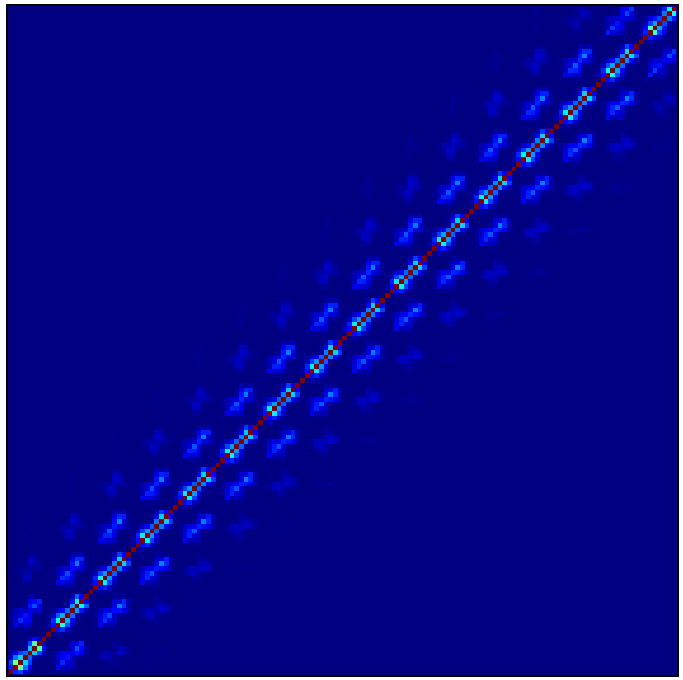


Scan 5

Normalized Yields



Correlation Values



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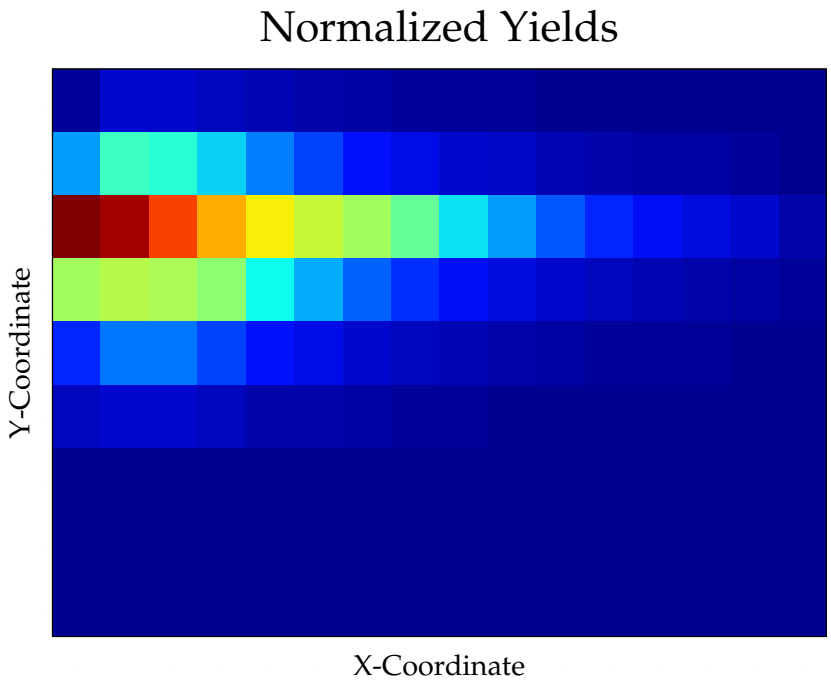
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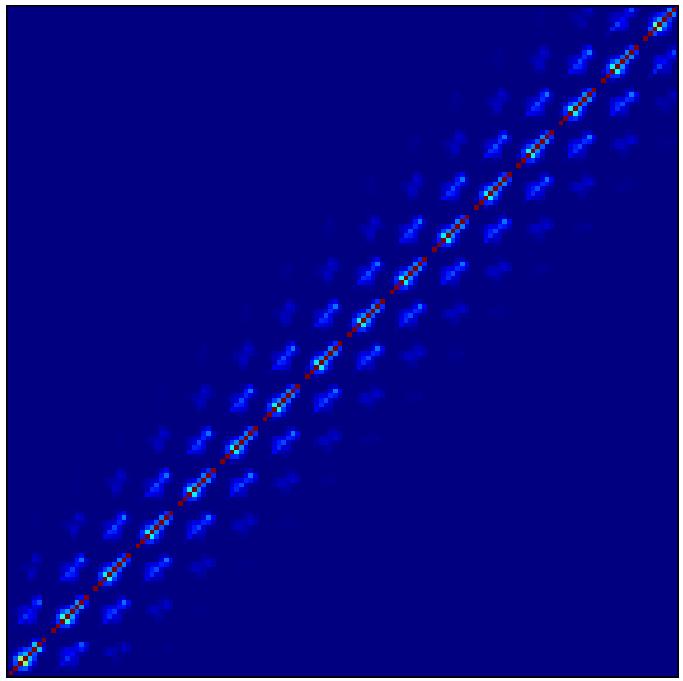
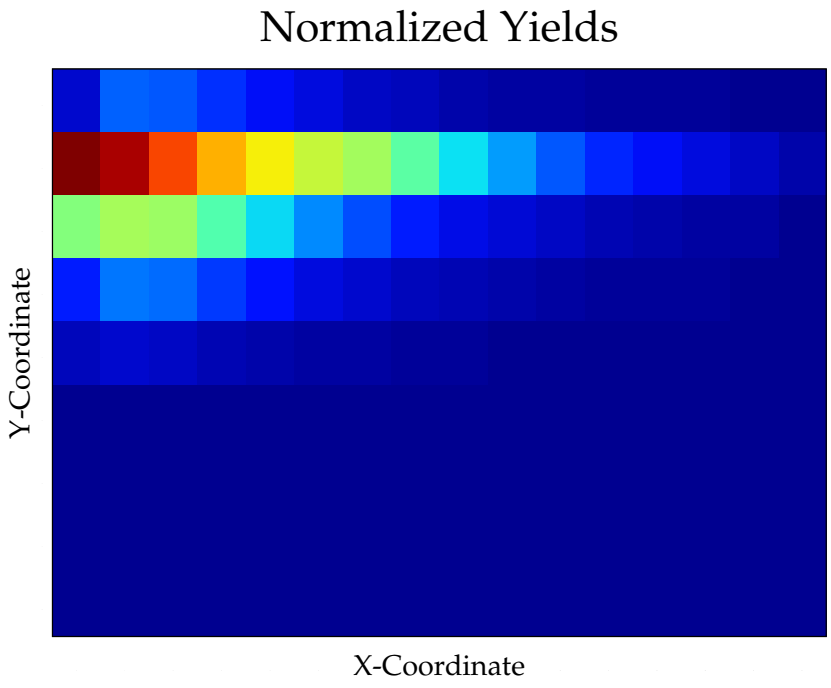
X-Coordinate


Correlation Values

Scan 7


Normalized Yields
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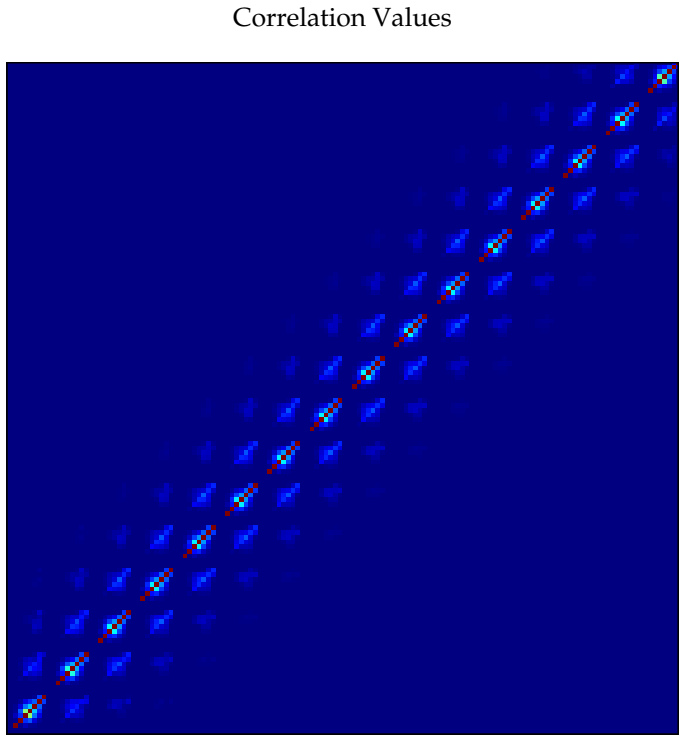
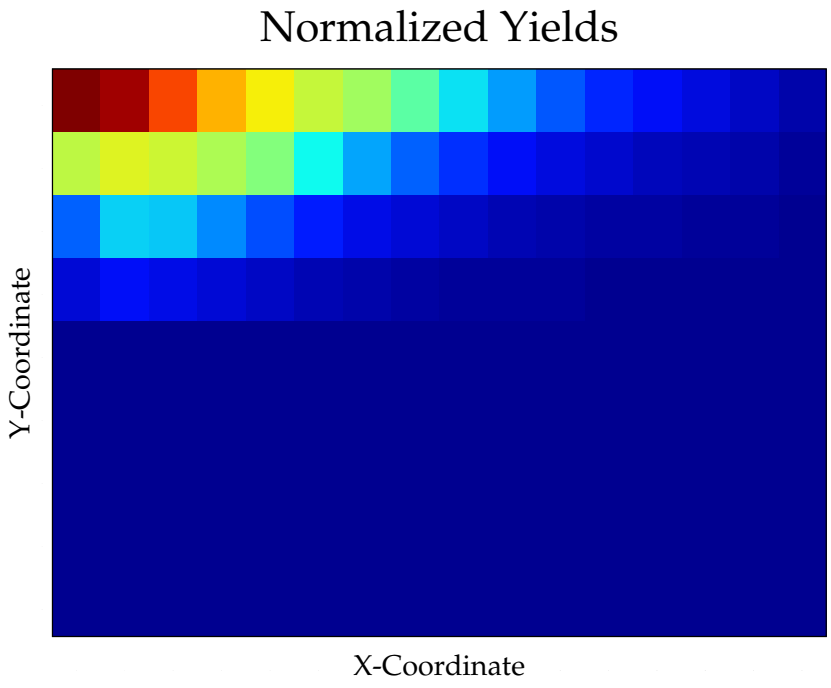
X-Coordinate


Correlation Values

Scan 8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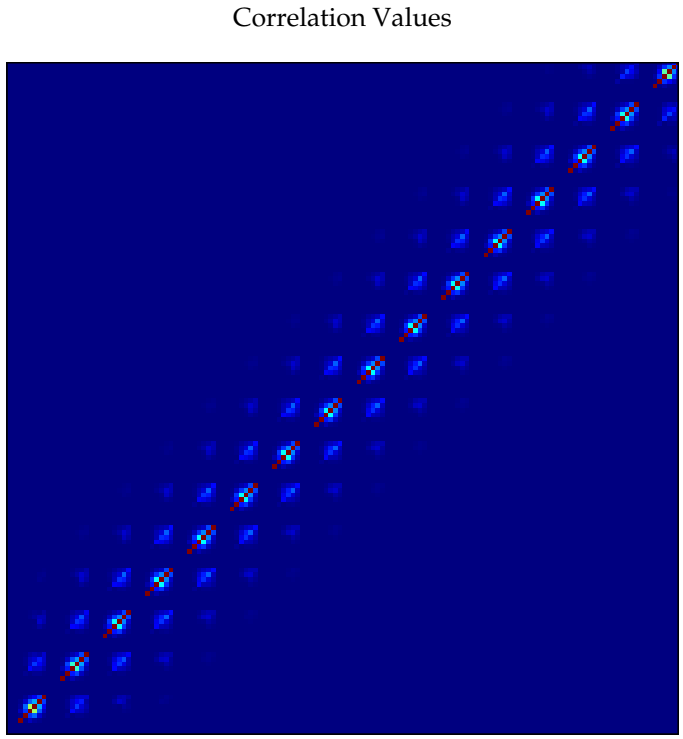
Correlation Values