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Vectorized processing of nested data

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Array-at-a-time processing is key for performance of low arithmetic intensity calculations, such as plotting, because of sequential memory access and SIMD parallelization. However, HEP data typically have nested structures and HEP algorithms typically require inner loops. We will present techniques for manipulating arrays of nested data to perform combinatoric calculations (e.g. pairs of particles per event) without explicit loops, as well as high-level idioms to express them in a data analysis.

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