

# Teaching a Computer to Integrate

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**Abstract:** As the integrated luminosity of the LHC increases, the number of Monte Carlo (MC) events required increases as well. The cost of generating these events will eventually be cost prohibitive. Thus, improvements are required in event generation. The major inefficiency in the MC generation is from generating unweighted events. Using machine learning techniques, I will propose a new phase space integrator that will reduce the cost of generating high multiplicity events. Additionally, my approach improves on previous attempts in computational costs for high multiplicity events. The flow integrator will allow event generators to keep up with the needs of the LHC.

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**Session Classification:** Generative Models