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## Quantum Chebyshev Generative model for Fragmentation Functions

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In this work, we study a Quantum Generative Model based on the Quantum Chebyshev Transform that enables to learn and sampling probability distributions. The model is applied to fragmentation functions, which quantify the probability that a given parton decays into a particular hadron after a hard scattering event. The results show that this model enables an efficient sampling, performing a natural quantum interpolation when the sampling is executed on an extended register, a task that might be challenging to perform classically. Furthermore, we investigate the model's performance when correlations between the momentum fraction  $z$  and the energy scale  $Q$  are introduced via entanglement in quantum circuits. This study provides valuable insights into the correlations of these two variables

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### Short summary

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