

Jet clustering and matching with QAOA

Jet clustering and matching these jets to bosons are two important steps for realizing Color Singlet Identification. Using the benchmark of fully hadronic WW/ZZ separation, we demonstrated the performance of traditional jet clustering and matching algorithms. Next, we aim to implement jet clustering and matching using the Quantum Approximate Optimization Algorithm (QAOA). Compared to traditional methods, we have not yet observed clear advantages from the quantum computation approach. However, exploring quantum algorithms for these tasks remains a valuable endeavor.

I am

student/postdoc

Primary author: 朱,永峰

Presenter: 朱,永峰

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