Contribution ID: **73**   Type: **not specified**

Volatility time series analysis by quantum circuit learning

Wednesday, 27 March 2024 18:30 (3 minutes)

Volatility is of great importance for quantifying potential risk of financial assets. In empirical finance, usually volatility is estimated by a suitable model selected various existing volatility models. Here we model the volatility time series by quantum circuits. Using artificial volatility time series generated by the GARCH model often used in empirical finance, we perform the quantum circuit learning and verify that simple quantum circuits can reproduce the time series generated by the GARCH model.

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Session Classification: Poster

Track Classification: Poster presentation