題目

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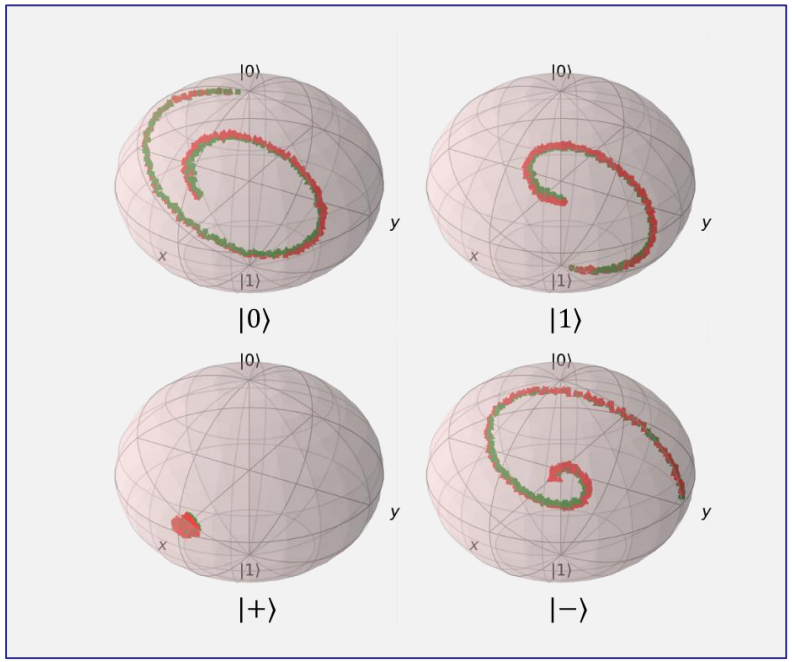
作品簡述

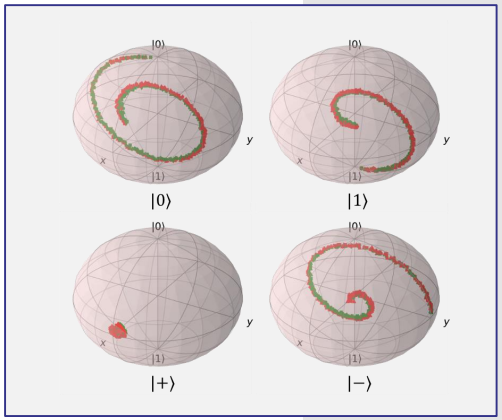
We develop a method based on Bloch sphere dynamics to quantitatively and systematically analyze noises in the IBM Q systems. The detailed noises characterization on quantum computers can be beneficial of simulating the quantum noises in open quantum system dynamics, which can be the significant applications of NISQ devices.



題目

研究結果

1. Noises characterization method based on Bloch sphere
2. The ability to extract the information of noise in the experiment, study how noises from the environment affect the system and change over time.



研究結論

1. Each quantum gate has its own noises
2. The imperfection of $(X)^2$ consists of over-rotation errors from gate error and decoherent errors from environment