Qubit Dynamic Poster Text Resources

Introduction(This part should give a brief explain about what is quantum computing and what is the qubit)

In quantum computing and information, a qubit is a key building block that represents a two-level quantum system. The property that it can state in a superposition of state 0 and state 1 provide an outstanding ability in storing data in limited space. The Rabi frequency, Ω\_R, is the defining characteristic that measures the speed at which qubit states transition due to the influence of external fields.

What can this be used for(cutting edge development)

Due to the uncertainty of quantum particles, the quantum computing can generate True Random Number. Almost all the random number used in our daily life, including random generation of monsters in games, lucky dog in lotteries and famous DND games, are basing on a “Fake Random Number” which is pre-recorded or generated with a certain algorithm. These are predictable, if you could find some hidden conditions like the random seeds. If you throw a dice and use an super-camera from year 3023 to record its position, velocity and acceleration, you may still be able to predict the result of this throw. However, quantum computer can generate True Random Number that is completely unpredictable. This is due to the jump of the qubit is physically unpredictable,

Monte Carlo Simulation:

Monte Carlo simulation is a way to simulate a random phenomenon. It has been regarded as one of the best way do describe random phenomenon using classical way.(Reference required. https://www.nature.com/articles/d41586-023-02176-6) The key features of this simulation is comparison, iteration,

Liu, Y., Zhao, Q., Li, MH. *et al.* Device-independent quantum random-number generation. *Nature* **562**, 548–551 (2018). https://doi.org/10.1038/s41586-018-0559-3