Universidad de Valladolid

Q-CAYLE COMUNICACIONES CUÁNTICAS

From Kibble-Zurek Mechanism to Coherent Quantum Computing: Recent Experimental Works and Challenges Ahead

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Abstract: In recent decades, there have been remarkable advances in the impact, control, and development of quantum computers. One important aspect of this development is characterizing the non-equilibrium dynamics in noisy intermediate-scale quantum devices, which plays a crucial role in the search for scalable quantum computers and the development of both hardware and architecture designs. The physics beyond the Kibble-Zurek mechanism is a prominent paradigm for unraveling signatures of universal coherence in quantum dynamics. In this talk, we will present two experimental works that are framed in the context of quantum annealers and digital quantum computers. The experimental results show that there is still a long way to go before achieving a coherent quantum computer.

12:15

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