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	Nota di contenuto	Chapter 1: Preamble -- Chapter 2: The squeeze-driven Kerr oscillator (SKO) implemented in a driven superconducting circuit -- Chapter 3: Representations and properties of the SKO -- Chapter 4: Experimental setup -- Chapter 5: Quantum tunneling observations in the ground state manifold of the SKO -- Chapter 6: Excited state manifold: spectral kissing, multilevel degeneracies, and their fingerprint on the qubit lifetime -- Chapter 7: A decoherence model for the SKO: an RWA model and treating effects beyond the RWA -- Chapter 8: Conclusions and future directions.
	Sommario/riassunto	The thesis illustrates, with a remarkable combination of theoretical analysis and experimental investigation, how the static Hamiltonian of an oscillator with both 3rd and 4th order non-linearity can morph into a profoundly different Hamiltonian under the influence of an oscillating driving force. In a classical system, such transformation would not be

considered a novelty, but the author demonstrates that the new Hamiltonian can possess an exotic symmetry with surprising new quantum properties that one would never anticipate from the original Hamiltonian, with no classical equivalent. The root cause of these unexpected properties is a subtle interference effect, which is only possible in a quantum context. Carefully crafted control experiments ensure that measured data are compared with theoretical predictions with no adjustable parameters. Instrumental in this comparison is a new diagrammatic theory developed by the author.