The singular Weinstein conjecture

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The Weinstein conjecture (1979) concerns the existence of periodic orbits of Reeb vector fields. Over the years, the conjecture has undergone significant developments and the conjecture has evolved from existence of periodic orbits to existence of infinite periodic orbits.

In this talk, I will provide a historical overview of the Weinstein conjecture and discuss variations for singular contact manifolds. I will relate the singular Weinstein conjecture with the existence of escape orbits in celestial mechanics and fluid dynamics. Time permitting, I will conclude with a counterexample to the singular Weinstein conjecture.This talk is based on joint works with Josep Fontana-McNally, Cédric Oms, and Daniel Peralta-Salas.