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Coupling InSb quantum dots to a superconducting microwave resonator MAJA CASSIDY, JAKOB KAMMhubER, Kavli Institute of Nanoscience, Delft University of Technology, DIANA CAR, SEBASTIEN PLISSARD, ERIK BAKKERS, Department of Applied Physics, Eindhoven University of Technology, LEO DICARLO, LEO KOUWENHOVEN, Kavli Institute of Nanoscience, Delft University of Technology — We present measurements of a superconducting half-wave resonator coupled to two InSb nanowire quantum dots. Precise nanowire alignment at the electric field antinodes at opposite ends of the microwave cavity allows for a maximal electric field along the wire axis, without compromising the intrinsic quality factor of the cavity. This architecture may be useful for reaching the strong coupling limit between a single spin and a microwave photon, paving the way to on-chip coupling of single spins for quantum information processing.

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