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Face-off: Classical Antennas vs. Quantum Sensors KEVIN COX, US Army Research Lab, DAVID MEYER, ZACHARY CASTILLO, US Army Research Lab, University of Maryland, FREDRIK FATEMI, PAUL KUNZ, US Army Research Lab — Classical antennas are well-established as the world's-best sensor for most of the technologies that we know and love, but a new upstart has emerged. I will introduce how quantum sensors offer an alternative way to receive electro-magnetic signals. Our simple quantum receiver based on warm Rydberg atoms is quantum-limited and has recently demonstrated high-sensitivity and high-bandwidth reception even in the extreme electrically-small regime, where traditional antennas falter. In what other areas might the darling quantum sensors upset the reigning champs?

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