

# Nuclear-spin-based rotation sensing with diamond

*Thursday, 19 October 2023 15:00 (30 minutes)*

A nuclear-spin-based rotation sensor is implemented based on simultaneous measurements with two nitrogen isotopes intrinsic to nitrogen-vacancy centers in diamond, employing a microwave-free technique with optical addressing of nuclear spins. Differential measurements suppress systematics related to magnetic-field and temperature variations.

**Primary author:** JARMOLA, Andrey (UC Berkeley)

**Co-authors:** LOURETTE, Sean (UC Berkeley); ACOSTA, Victor (University of New Mexico); BIRDWELL, Glen (DEVCOM Army Research Laboratory); BLÜMLER, Peter (Johannes Gutenberg-Universität Mainz); BUDKER, DMITRY (Helmholtz Institute Mainz and UC Berkeley); IVANOV, Tony (DEVCOM Army Research Laboratory); MALINOVSKY, Vladimir (DEVCOM Army Research Laboratory)

**Presenter:** JARMOLA, Andrey (UC Berkeley)

**Session Classification:** Precision and Quantum Measurements

**Track Classification:** Precision and Quantum Metrology with Atoms, Photons and Phonons