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Optical Temperature Stabilization System for RF Electric Field Probes MANIKA ROSS, DR. ERIC PARADIS, Eastern Michigan University, DR. GEORG RAITHEL, University of Michigan, DR. DAVID ANDERSON, Rydberg Technologies — We report on an optical temperature stabilization system of a rubidium vapor cell, to be used in radio frequency (RF) field sensing experiments. Rydberg atoms are highly sensitive to external electric fields, but the intensity of an absorption signal from these atoms will vary with temperature. This research will be used to separate detected signal variations due to applied electric fields from temperature fluctuations. Several designs were developed to provide both passive and active temperature control.

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