

Rydberg atom-based quantum sensors are gaining increasing attention due to their unique sensing capabilities and advantages over conventional techniques. They are absolute, drift-free and are not prone to aging effect and therefore do not require calibration. Rydberg-based quantum sensors operate at room temperature, without the need for cryogenic cooling nor active pumping mechanism. For that reason, they are perfectly suited for miniaturization in the future. Using the experimental platform of thermal vapors in glass cells, I will show how Rydberg atoms can be exploited for electromagnetic field sensing with promising applications in radar and communications, battery diagnostic and space weather monitoring.