

## PROGRESS IN OPTICALLY-DETECTED SPIN-RESONANCE ON HELIUM DROPLETS

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We have recently demonstrated the possibility of optically detecting the spin state of alkali metal atoms and molecules formed on helium nanodroplets and immersed in a magnetic field.<sup>ab</sup> This has already allowed us to show that the electronic spins of atoms do not relax within the timescale of the experiment ( $\sim 10^{-3}$  s) and those of molecules do. With this prerequisites fulfilled, we now set to demonstrate that electron spins on a He droplet can be manipulated. We have already achieved optical pumping, which we intend to present at the meeting, and we strive to soon reach optically-detected electron-spin resonance.

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<sup>a</sup>J. Nagl, G. Auböck, C. Callegari and W. E. Ernst, *Phys. Rev. Lett.* **98**, 075301 (2007).

<sup>b</sup>G. Auböck, J. Nagl, C. Callegari and W. E. Ernst, *J. Phys. Chem. A* **111**, 7404 (2007).