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Loading an Inductively Coupled Ring Trap PAUL GRIFFIN, ALINE DINKELAKER, MATTHIEU VANGELEYN, AIDAN ARNOLD, ERLING RIIS, University of Strathclyde — We report on experimental progress towards an atom–interferometry experiment in a smooth ring geometry. We have proposed a new form of toroidal trap for ultra-cold and quantum degenerate atomic gases. By applying a time-varying magnetic field about an electrically isolated conducting loop a stable, time-averaged minimum of the magnetic field is formed from the superposition of the applied and induced fields. This geometry resolves the issue of perturbations of the ideal symmetry of the toroidal geometry due to electrical connections and benefits from time averaging of corrugating potentials due to current meandering. We present the status of a new experimental apparatus to use Bose (^{87}Rb) and Fermi (^{40}K) degenerate gases for Sagnac interferometry. We describe the procedure for loading an ultra-cold cloud of atoms into the trapping potential through a moving molasses in a magnetic field. Our laser system for cooling of K and its integration into the project are discussed, along with future development of the project.

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