PERMANENT ELECTRON ELECTRIC DIPOLE MOMENT SEARCH IN THE $X^3\Delta_1$ GROUND STATE OF TUNGSTEN CARBIDE MOLECULES

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We are developing an experiment to search for the permanent electric dipole moment (EDM) of the electron using the valence electrons in the $X^3\Delta_1$ ground state of Tungsten Carbide (WC) molecules. Currently, we are detecting the molecules by Laser Induced Fluorescence spectroscopy at $\sim$75cm downstream of a pulsed ablation beam source. We have a detection rate of $\sim$10 ^{182}W^{12}C molecules/second in $X^3\Delta_1$, v"=0, J"=1 state with geometric detection efficiency of 0.004. A continuous WC molecular beam is under development. Additionally, preliminary measurements of the ^{183}W^{12}C hyperfine structure will be presented.