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Probe Detuning Dependence of Free Induction Decay in Nuclear Magnetic Resonance HAN SEB MOON, YE JIN YU, SUNGHO MIN, Pusan National University — We investigated on the dependence of Free Induction Decay (FID) on the detuning range of probe light in Nuclear Magnetic Resonance (NMR) experiment. Detuning range varies around a resonance frequency of ^{87}Rb atom. We use ^{129}Xe-^{87}Rb gas mixture including N_2 and H_2 in hot vapor condition. ^{129}Xe is a NMR element and ^{87}Rb has two roles as mentioned above, one is FID detector as a magnetometer and the other is pumping agent making ^{129}Xe hyperpolarized. We measured FID signal by means of detection of optical rotation of probe light detuned to near the resonance region, F=1 $\rightarrow$ F'=2 of ^{87}Rb.

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