

Abstract Submitted
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Study of surface interactions of spin polarized Rb atoms in coated cells using the evanescent wave magnetometer¹ K.F. ZHAO, M. SCHADEN, Dept. of Phys, Rutgers University - Newark, Z. WU, Rutgers University - Newark — We describe a new method of studying surface interactions of spin polarized rubidium atoms on silicone-coated Pyrex glass surfaces by operating the evanescent wave magnetometer in an inhomogeneous magnetic field. By analyzing the lineshape of the magnetic resonances using a theory we developed, we can estimate various parameters that characterize the surface interactions. Most interestingly, the lineshape is very sensitive to the phase shift of the Rb atom while it is on the surface. We measured for typical Surfasil(silicone) coated cells.

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