

Overlapping Synchrotron Sideband Resonances*,
S.Y. LEE, M. BERGLUND, Indiana University - The synchrotron sideband spin resonances are shown to arise from the kinematic effect of spin phase modulation. The resonance strength is shown to be proportional to the primary resonance. A method is developed for analyzing overlapping spin resonances and applied to fit polarization data of SPEAR and data recently obtained from polarized beam experiments at the IUCF Cooler Ring. The implication of our analyses is that synchrotron sidebands can only be corrected by correcting its principle resonance. Futhermore, the effect of synchrotron sidebands in proton synchrotrons is to change the resonance phase without changing the magnitude of the strength.

* Work supported by grants from NSF PHY-9221402 and DOE DE-FG02-93ER40801.