

**The Slow Extraction Method for a Compact Synchrotron, X. KANG, S.Y. LEE, IUCF - A Cooler Injector Synchrotron (CIS)** is a compact synchrotron, presently being commissioned at Indiana University Cyclotron Facility. It is designed to accelerate high intensity polarized proton (deuteron) beam from 7 MeV (6 MeV) to 200 MeV (105 MeV). A slow extraction method is studied to extract a smooth, uniform proton beam by the third order betatron resonance excited by sextupoles. The strength and position of the sextupoles, the structure of the septum, and the beam phase space motion will be discussed. With the uniform beam by the slow extraction, this kind of synchrotrons will be an ideal machine for medical applications.