

**A New Type of Rf Cavity for High Intensity Proton Synchrotron using High Permeability Magnetic Alloy,** M. FUJIEDA, Y. MORI, H. NAKAYAMA, C. OHMORI, K. SAITO, Y. SATOH, Y. TANABE, A. TAKAGI, Y. TODA, T. UESUGI, M. YAMAMOTO, T. YAN, M. YOSHII,  
KEK - A new type of accelerating RF cavity for high intensity proton synchrotron, which uses high permeability magnetic alloy (MA) such as FINEMET, has been proposed and under development at KEK for the JHF proton synchrotrons. Because of its large accelerating field gradient of more than 100 kV/m, which is almost ten times larger than that of the conventional ferrite-loaded cavity, the total length of the cavity can be shortened dramatically and stable operation under heavy beam loading becomes possible.