Tune Measurements in the SPS as a Multicycling Machine, C. BOCCARD, W. HÖFLE, L. JENSEN, R. LOUWERSE, H. SCHMICKLER, CERN, Geneva - Throughout the operation period of the SPS different particles are accelerated: high intensity protons, leptons and heavy ions. For each particle type a measurement of the betatron tunes along the acceleration cycle is required. The paper describes different excitation techniques and treatment of the data optimized for each particle type and intensity. Measurement examples are given.