

**Measurement of the Tune Variations Induced by
Non-Linearities in Lepton Machines,**

R. BARTOLINI, M. GIOVANNOZZI,

W. SCANDALE, A. VERDIER, CERN;

E. TODESCO, INFN BOLOGNA; J. CORBETT,

M. CORNACCHIA, P. TRAN, SSRL;

C. PELLEGRINI, UCLA - The precise measurement of

the betatron tune as a function of the oscillation

amplitude provides a basic information on non-linear

beam dynamics. In lepton accelerators, this

measurement is made difficult due to various damping

mechanisms. To counteract this, we propose to use

sophisticated algorithms that provide a precise

measurement of the tune in a small number of turns.

We apply these procedures in LEP at injection and

collision energy, as well as in SPEAR. Collections of

experimental data, and comparisons with results of

model-based simulations are discussed.