

**Effect of Very Low Frequency Ground Motion on the LHC, L. VOS, CERN** - The power spectrum of ground motion noise is known to increase extremely fast with decreasing frequency. The wavelength of groundwaves will eventually become larger than the machine dimensions. Ideally the effect should disappear for these long waves since all the elements of the machine are supposed to move in the same way. In fact this is not the case since these long powerful waves lose coherence and therefore relatively slow orbit drifts are to be expected. A model is presented based on geophysical arguments and it is confronted with observations concerning slow orbit changes in large existing accelerators.