Electron Cloud Memory Effects

F. Petrov

[a] *Institut für Theorie Elektromagnetischer Felder (TEMF), Technische Universität Darmstadt, Schloßgartenstr. 8 64289 Darmstadt*

Abstract

Electron cloud is a concern for many modern and future accelerator facilities. There are a number of undesired effects attributed to the presence of electron clouds. Among them are coherent instabilities, emittance growth, cryogenic heat load, synchronous phase shift and pressure rise. In long bunch trains one can observe the emittance growth getting faster along the train. This coupled bunch effect is mainly due to the growing electron cloud density along the bunch train. In this paper we address other mechanisms that can lead to the coupled-bunch electron cloud effects.