



ΓΕΝΙΚΟ ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑΤΟΣ ΦΥΣΙΚΗΣ

PHYSICS COLLOQUIUM

Thursday, 9 December 2010
17:00-18:00

3rd Floor Seminar Room

***“NON-LINEAR BEAM DYNAMICS IN PARTICLE
ACCELERATORS: THEORY, NUMERICAL SIMULATIONS
AND EXPERIMENTS”***

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Abstract:

Due to their collective nature and the field errors induced by the magnetic devices used for guiding and focusing them, the motion of beams in particle accelerators is intrinsically non-linear. After a brief overview of the non-linear effects' nature and the connection to performance issues of different particle accelerators, the theory of non-linear particle motion is reviewed. The recent developments on the methods used to analyze non-linear beam motion are outlined. In particular, the application of the frequency map analysis method in particle tracking simulations but also for analyzing experimental particle data is detailed.