



Università degli Studi di Cagliari
Dipartimento di Fisica



Istituto Nazionale di Fisica Nucleare
Sezione di Cagliari

High Energy Theory Group

Avviso di Seminario

Lunedì 30 Novembre 2009
h. 16:30 – Aula C

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Probing the Z' sector of the minimal B-L model at future Linear Colliders in the $e^+e^- \rightarrow \mu^+\mu^-$ process

We study the capabilities of future electron-positron Linear Colliders, with centre-of-mass energy at the TeV scale, in accessing the parameter space of a Z' boson within the minimal B-L model. In such a model, wherein the Standard Model gauge group is augmented by a broken $U(1)_{B-L}$ symmetry (with B(L) being the baryon(lepton) number) the emerging Z' mass is expected to be in the above energy range. We carry out a detailed comparison between the discovery regions mapped over a two-dimensional configuration space (Z' mass and coupling) at the Large Hadron Collider and possible future Linear Colliders for the case of di-muon production. As known in the literature for other Z' models, we confirm that leptonic machines, as compared to the CERN hadronic accelerator, display an additional potential in discovering a B-L Z' boson as well as in allowing one to study its properties at a level of precision well beyond that of any of the existing colliders.

