

MEMORANDUM

From/De : K. Eggert, contact person of CosmoLep
To/à : Members of the SPS Committee
Subject/Sujet : Installation of a test set-up in LSS4

In the autumn of 1999 the proposal "CosmoLEP, an underground cosmic ray muon experiment in the Lep ring" was presented to the LEPC. A set of muon chambers installed in the ALEPH underground cavern would serve to measure high-multiplicity muon bundles which have been observed recently using the ALEPH detector. Whereas the referees judged the proposal very positively the LEPC disapproved it since they considered the timescale (parallel cosmic runs during LEP data taking in 2000) to be too constrained. They were also concerned that the muon chamber installation might interfere with the ALEPH experiment which underwent major repairs to its TPC during the 1999/2000 shutdown. Nevertheless, the LEPC encouraged the proponents to continue by stating the following: "However, the committee considers that both the physics and the basic experimental concept are attractive and that these ideas could be developed further."

We are therefore investigating the possibility of both installing and running the cosmic experiment during the LHC installation and we foresee an enlarged proposal for autumn this year, which will include a counter array on the top. Our discussions with the LHC planning officers have shown that a co-existence between CosmoLHC and the LHC installation is possible from the year 2002 onwards.

In order to prepare the proposal we would like to test the response of our chambers to high-multiplicity muon showers. It will be necessary to perform these measurements underground to enable us to shield against the overwhelming electro-magnetic radiation. An ideal place for this test set-up is at the LSS4 area (formerly UA2) which is about 50 m underground and which is shielded from the SPS beam. After having discussions with Paul Collier (the responsible side manager) a free array of about 60 m² with a counting house close by was found where a tower of test chambers could be placed. It is worth mentioning that non-flammable gases are used in our chambers and that we will cope with the proper safety regulations in this area.

We would hence like to ask the SPSC for the right to undergo tests during the year 2000 through the beginning of 2001. Please note that these tests will in no way interfere with any current activities in this area or those in the foreseeable future.

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