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SUMMARY OF PROPOSAL

A FIVE-FOLD INCREASE IN THE ACCEPTANCE  
OF R 108 FOR ELECTRON PAIRS

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This proposal is for a modification to the detection system inside the superconducting solenoid of experiment R 108 to extend the detection of electrons,  $\gamma$ 's and  $\pi^0$ 's to nearly the complete azimuth, thus increasing the acceptance for high mass  $e^+e^-$  pairs by a factor of 5. The physics aims are :

- a) search for Toponium
- b) systematics of lepton pair production
- c) search for jets balancing the transverse momentum of a high  $p_T$  lepton pair
- d) search for X states
- e) improved measurement of jets produced along with a high  $p_T$   $\pi^0$ .

The modification consists of adding lead scintillator shower counters inside the solenoid in the azimuthal range not covered by the existing lead-glass detector requiring a rearrangement of the existing drift chambers.

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