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AMENDED PROPOSAL TO STUDY 10 GEV/C  $K^-$  MESONS

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A proposal (CERN/TC/COM 63-53) has previously been made to study high energy  $K^-$  and  $K^+$  mesons using R.F. separators. The original request for 14 GeV/c particles has been reduced to 10 GeV/c for reasons of flux.

A scanning of most of the 2,500 photographs taken shows that if we assume that there are about one pion per 18  $K^-$  (as indicated by the  $K^+$  beam studies), then from cross-section measurements the beam would consist of 63%  $K^-$ , 3%  $\pi^-$ , and 34%  $\mu^-$  approximately, which is in agreement with the counter measurements. This would imply about 7  $K^-$  per photo. About one quarter of events gave at least one observed strange particle which is about the proportion found at 6 GeV/c.

The aims of the experiment (described in the previous proposal) were

- a) to look for and study rare processes such as  $\Omega^-$  production and the existence of strangeness 2 resonances;
- b) to study certain event types which, from our experience with 8 GeV/c  $\pi^+$ , might be of particular interest;
- c) a general study of  $K^-$  interactions at high energy.

For (b) we are particularly interested in 4-prong and 4-prong +  $V^0$  events. About 1,000 events would be required to study one reaction channel reasonably. From 6 GeV/c  $K^-$  preliminary results, this would indicate that 12,000 events of type 401 would have to be measured and this would require the taking of 500,000 photographs. From previous experience this is also about the number that would be required to study  $\Omega^-$  hyperons. The measuring capacity of the collaboration is about 30,000 events/year.

Thus we would request 500,000 photographs of 10 GeV/c  $K^-$  in the 150 or 200 cm hydrogen bubble chambers of which at least 150,000 should be taken before the July shut-down if possible, due to the lack of film to study in each of the 4 groups.