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INTERSECTING STORAGE RINGS COMMITTEE

PROPOSAL TO STUDY LARGE TRANSVERSE MOMENTUM EVENTS USING THE SPLIT FIELD MAGNET DETECTOR AND THE STREAMER CHAMBER IN THE ISR

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The recent results on the frequency of high momentum transfer events, obtained at the ISR by the CERN-Columbia-Rockefeller group, invite more detailed study of such events.

We propose to use the split field magnet, triggered either by a set of lead glass Cerenkov counters, or by a hadronic calorimeter, or by both. These trigger detectors would be placed as close to the SFM as convenient, in the region between $\pm 45^0$ around 90^0. Hopefully the split field magnet detector will be able to work at full luminosity, and our proposed trigger could be an alternative trigger to other experiments run simultaneously. Therefore, the experiment requires no exclusive running time. On the other hand a fair amount of space is required close to the magnet and in the 90^0 region.

While waiting for the SFM detector, the trigger system could and should be used in an experiment to trigger the streamer chambers in I 7 after completion of the presently approved R-701 programme.

We propose to trigger both on photons and on hadrons. For photons we intend to use initially the ACT Cerenkov detector, if available. This can, in early 1974, be augmented with or replaced by the Cerenkov detector being prepared by the Heidelberg group for the Σ^0 lifetime experiment. For hadrons, the CERN-Munich hadronic shower detector is a possibility. Design studies are in progress for a more sophisticated device.

It is understood that the phase of the experiment using the streamer chamber,all physicists involved in R-701 will contribute, with the addition of a few members of the R-409 group. For the phase using the split field magnet the entire R-409 group will participate, together with a few members of the R-701 collaboration.