Summary of Results and Key References

Project title

Tagging High Energy Photons in the H1 Detector at HERA

INTAS reference number

INTAS-RFBR 95-0679

Period of project

1st December 1996 to 1st December 1999

Co-ordinator

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Results

The main result of the group's activities has been the design, construction and installation of an electromagnetic calorimeter for tagging photoproduction in the H1 detector with the attendant level one trigger, readout system and custom built beampipe. This calorimeter, the Etag8, is now being used to make measurements of photoproduction processes in the range $0.85 < y < 0.95$, i.e. at the highest photon-proton centre-of-mass yet observed. The design procedure involved measuring the radiation dose likely to be absorbed by the calorimeter and testing the calorimeter's optical components for their radiation hardness to ensure they could withstand the expected dose. A Technical Proposal was written and approval for the project obtained. A prototype calorimeter was constructed and tested extensively. Trigger and readout hardware and software were produced and the prototype was successfully integrated into the H1 trigger and data acquisition systems. Calibration procedures were developed, the necessary software produced and the prototype calibrated. The reconstruction software was written and was tested using the prototype. Following a delay due to changes in the HERA schedule, the custom built beampipe was installed and the taking of data useful for the abovementioned measurements of photoproduction in the high y region began. Preliminary results obtained using these data are now available.

Further Information

Further information may be obtained from the group's web site:
http://hep.ph.liv.ac.uk/~green/etag8