Registration for the Spring-Conference of the
German Physical Society
from 16.3. to 20.3.1998
in **Bochum**

**Measurement of Leading Neutrons in Deep Inelastic Scattering at HERA** — •F. Metlica for the H1 – Kollaboration — Max-Planck-Institut für Kernphysik, Saupfercheckweg 1, 69117 Heidelberg

In 1996 a new Forward Neutron Calorimeter (FNC) was installed in the H1 experiment at HERA, to measure the energy and angle of high energy leading neutrons produced in $ep \rightarrow e'nX$. This deep inelastic scattering process is of interest because one pion exchange is thought to be the dominant contribution at small momentum transfers. These neutrons are produced with small angles $\sim$1 *mrad* with respect to the proton's incoming direction. The ratio of leading neutrons respect to deep inelastic scattering events and the cross section for this reaction has been measured. The energy and |t| distributions of the observed leading neutrons are compared to Monte Carlo predictions based on pion exchange and soft colour interaction.

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| Address: | Thomas Nunnemann<br>Max-Planck-Institut für Kernphysik<br>Saupfercheckweg 1<br>69117 Heidelberg<br>(06221)516-432 |
| Email: | Thomas.Nunnemann@mpi-hd.mpg.de |

I am a member of the German Physical Society (number: 940400).