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Deep Inelastic Charged Current Events at HERA II and their Triggering using Neural Networks at H1 —
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The longitudinal lepton beam polarisation at HERA opens the opportunity for new sensitive tests of the electroweak interactions and physics beyond the Standard Model.

Deep inelastic $e^{\pm}$p-scattering with the exchange of a $W^{\pm}$ (charged current reaction) is of particular interest due to the polarisation dependence of the cross section of such reactions. Since the neutrino escapes detection, a feature of these events is a large missing transverse momentum. The selection of charged current events at the H1 experiment is based on this typical signature.

In order to handle high background rates H1 uses a four level trigger system. On the second trigger level correlations from the different level 1 trigger systems can be exploited. One solution for this pattern recognition task are feed forward neural networks, implemented in the hardware of the Level 2 Neural Network trigger. The development, testing and splendid results of a new network specialised for charged current events is presented.

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