

# Long-term Experience with Grid-based Monte Carlo Mass Production for the ZEUS Experiment

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The detector and collider upgrades for the HERA-II running at DESY have considerably increased the demand on computing resources for Monte Carlo production for the ZEUS experiment. To close the gap, an automated production system capable of using Grid resources has been developed and commissioned.

During its first year of operation, 400 000 Grid jobs were submitted by the production system. Using more than 30 Grid sites (LCG and Grid2003), 350 million events were simulated and reconstructed on the Grid. We will present the production setup and its implementation which is based on the ZEUS Grid-toolkit. Our setup includes an elaborate system to monitor the participating sites and every submitted Grid job. This system enables us to identify sources of failures and bottlenecks quickly and take the appropriate actions. We will describe this monitoring system and analyze the efficiency and typical failure modes of the current Grid infrastructure using the collected data.

With the attained expertise the Grid can be used efficiently by the presented Monte Carlo production system and is now the major source of Monte Carlo events for physics analyses within the ZEUS collaboration.

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