

*Schroeder*

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The above contract/grant supported research in experimental high-energy physics at the Fermi National Accelerator Laboratory, and recently the US participation in the LHC experiments at CERN in Geneva, Switzerland.

The program began with our being founding members in E-740 at Fermilab, a search for a quark-gluon plasma in proton-antiproton collisions at 1.8 TeV GeV at the Tevatron Collider. This was the first experiment performed at the new Tevatron Collider, which remains the highest energy machine in the world. Ten papers were published in Nuclear Instruments and Methods, Physical Review Letters, and The Physical Review (see publication list below and references to Anderson et al., Lindsey et al., and Alexopoulos et al.) One PhD and two MS degrees were awarded to three graduate students by Iowa State University. One Postdoctoral Research Associate was employed.

At the conclusion of E-740, we joined the D0 experiment (E-740, upgrade E-823) at the Tevatron Collider. The experiment was designed to give a hermetic and comprehensive detection of hadrons, photons and leptons at the highest attainable luminosity. To date, ninety papers have been published in Nuclear Instruments and Methods, Physical Review Letters, The Physical Review, and Physics Letters (see publication list below and references to Abachi et al. and Abbott et al.) Two PhD degrees and been awarded by Iowa State University, and two graduate students are currently writing their PhD theses. Three Postdoctoral Research associates have been employed.

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## Published Papers

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1. B. Abbott, et al., (D0 Collaboration), *Hard Single Diffraction in  $p\bar{p}$  Collisions at 630 and 1800 GeV*  
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