

TRENDS IN THE USE OF DIGITAL TECHNOLOGY FOR CONTROL AND REGULATION OF POWER SUPPLIES.

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* Work supported by U.S. Department of Energy, Office of Basic Energy Sciences under Contract No. W-31-109-ENG-38. The submitted manuscript has been created by the University of Chicago as Operator of Argonne National Laboratory ("Argonne") under Contract No. W-31-109-ENG-38 with the US Department of Energy. The U.S. Government retains for itself, and others acting on its behalf, a paid-up, nonexclusive, irrevocable worldwide license in said article to reproduce, prepare derivative works, distribute copies to the public, and to perform publicly and display publicly, by or on behalf of the Government.

Since the availability of computers, accelerator power supplies have in some way relied on digital technology. Early applications were limited to such simple tasks as on/off control and computer-controlled setpoints. Advances in digital technology, both in performance and reduced cost, coupled with increasing demand in higher supply performance and monitoring capabilities, have stimulated considerably more sophisticated applications beyond simple control and monitoring. This paper will survey current trends in the application of advanced digital technology to power supplies for accelerators and other large-scale physics applications. Applications of embedded DSP controllers, digital generation of high stability, high precision references, and real-time algorithms for the regulation and control of power supplies will be discussed.