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

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Since the availibility of computers, accelerator power supplies have insome way relied on digital technology. Early applications were limitedto such simple tasks as on/off control and computer-controlledsetpoints. Advances in digital technology, both in performance andreduced cost, coupled with increasing demand in higher supplyperformance and monitoring capabilities,have stimulated considerably more sophisticated applications beyondsimple control and monitoring. This paper will survey current trends inthe application of advanced digital technology to power supplies foraccelerators and other large-scale physics applications. Applications ofembedded DSP controllers, digital generation of high stability, highprecision references, and real-time algorithms for the regulation andcontrol of power supplies will be discussed.