

Cockcroft Institute Seminar

Digital LLRF System Development

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Abstract

The low level RF control of accelerators with RF cavities can be improve by using digital controllers. By use of fast parallel calculation of the control filter algorithm with FPGAs the control loop should be able to drive such cavities. There is a special FPGA evaluation board design for this aim from Larry Doolittle, from Lawrence Berkeley National Laboratory. This board can be used with his USB controller firmware and Linux command line programs.

In this seminar it will be explained how the board can communicate with his host, how principle possibilities there are to control the board from a personal or industrial computer with Windows OS and which solution could be found to do this with a LabVIEW development system. This solutions contains the use of the board in a laboratory environment and at an accelerator facility which is controlled for example by EPICS.