Measurement of magnetic field using FPGA

Abstract

Integration of signals sensed by pick-up coil is required to measure magnetic field strength in plasma physics experiments in Tokamak. Integrator should work stable and drift free to get accurate results. The drift in Analog integrator is reduced by different method like compensation and RC tuning. But it has its own limitation, which make us to think about digital integration. The digital integration concept is to digitize the coil's signal first and then accomplish numerical integration using LabVIEW FPGA. The concept will be tested on cRIO hardware and its software. After conceptual testing the algorithm will be implemented in VHDL on Zynq board. The test case will be written for standard waveforms and the acquired mirnov coil signal.

Academic Project Requirements:

1) Required No. of student(s) for academic project: 2

2) Name of course with branch/discipline: B.E./B.Tech. Electronics and Instrumentation Engineering

3) Academic Project duration:

(a) Total academic project duration: 17 Weeks
(b) Student's presence at IPR for academic project work: 3 Full working Days per week

**Email to: praveena@ipr.res.in[Guide's e-mail address] and
          project_ece@ipr.res.in [Academic Project Coordinator's e-mail address]**

Phone Number: 079 -09427401266 [Guide's phone number]