

Letter of Intent

Application to join the CALICE Collaboration

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The above members of the Centre for Particle Physics at Royal Holloway are asking to join the CALICE collaboration. We have been working with CALICE-UK since autumn 2004, in particular on the development of the MC simulation of CALICE through Fabrizio Salvatore, who is currently part of the software development team. He has been recently involved in an update of the Geant4 based Linear Collider Monte Carlo software ('Mokka'). He developed a package ('driver') to simulate the drift chambers located in front of the CALICE prototype currently being tested in the DESY beam line. This package has already been included in the latest version of Mokka (V04-02).

In February 2005 we were included in the UK group's funding proposal to PPARC. Following the approval of this bid in July, we were granted financial support, including two years of a post-doctoral research assistant beginning in April 2007. Now that this funding is secured, we are applying formally to join the CALICE collaboration.

We propose an involvement in two areas, in both cases working in collaboration with other UK groups.

1. Within the UK DAQ work, the development of a test system for high rate switching to move data from on-detector boards to off-detector receivers. We will then use this system to measure the performance of different elements of the switching system. This proposal builds on Barry Green's expertise arising from development of the ATLAS High Level Trigger.
2. An extension of our current work on the analysis of test beam data and simulation, leading to physics analysis. Our experience in this area arises through Fabrizio Salvatore (as above) and through Mike Green's work for the ALEPH ECAL during development and running. We currently intend that our work for CALICE should include the development of physics benchmark analyses to be applied to different detector concepts but this could be modified according to the needs of the collaboration.

Michele Fauci Giannelli joins the group as a PhD student in October 2005 and will work full-time on the project. The other members of the group will be part-time while they complete other commitments. The new postdoc will be full-time on the project from April 2007.

M G Green
12 September 2005