

Contracts Final Presentation 19-20 Feb. 2004

1. Title of the presentation

A Overview of the SEPTIMESS Project

2. Speaker

Fan Lei

3. Abstract

SEPTIMESS (Space Energetic Particle Transport and Interaction Modelling for ESA Science Studies) is a project to investigate the effects of space energetic radiation to future ESA science missions and to develop the Geant4 toolkit as well as Geant4 based applications for the analysis and evaluation of these effects. It is a 30 months project started in September 2002, with QinetiQ as the prime contractor. Under it, five academic institutions have been selected to carry out one year long parallel studies: Imperial College, UK, has performed Geant4 based simulations of the test-mass experiments on board LISA and SMART-2; University of Southampton, UK, has carried out studies of the simulation requirements of the proposed XUES detectors and is developing Geant4 based simulations of the INTEGRAL mission; University of Geneva group, CH, has compiled a hadron interaction cross-section database and developed tools for the database to be used by Geant4 to improve its hadron physics capability; INFN/Genova has been developing a statistical test toolkit which Geant4 will use in developing and testing of its physics modules, it is also working on the improvement of the Geant4 atomic relaxation physics, which is required by the Beppi-Columbo mission; and finally, University of Bern group has developed two general purpose tools for space applications, the cosmic ray trajectory/regidity cut-off calculation code and the atmospheric shower simulation code, both using the Geant4 toolkit.