Project 1:

To study the characteristic of GEM Detector

Gas Electron Multiplier (GEM) was first introduced by F. Sauli in 1997 at CERN. It consists of a gas filled chamber with inside a single or multiple GEM foils. A continuous flow of gas mixture passes into the detector which allows the avalanche of electrons to occu. The system consists of a drift field where all the initial gas ionization takes place. Voltage applied across the gem electrodes to produce high electric field inside the holes. Electrons are ionized through primary and secondary ionization above the foil and then drift into the hole where multiplications occur due to avalanche mechanism. Then all the electrons are transferred into the induction region and get collected over the anode. The ratio between the number of electrons produced after the multiplication and the number of electrons above the GEM foil is referred as the Gain of the detector.

Project 2:

Strange enhancement in pp and pA collisions using simulation models

The goal of the High Energy Heavy-Ion physics program is to explore the study of strongly interacting matter, Quantum Chromodynamic phase diagram at extreme conditions such as high baryon density and high temperature using ultra high energy nucleus-nucleus collisions experiments. At these energies, the productions of strange hadrons in high-energy hadronic interactions provide a tool to investigate the properties of quark-gluon plasma (QGP). In fact, strangeness enhancement is proposed as a signature of QGP formation in nuclear collisions. Recent experimental results on pp collisions at 7 TeV, the yields of strange and multi-strange hadrons relative to that of pion increase significantly. . To understand this behaviour we can studied on the simulations model, AMPT (A Multi-Phase Transport Model).