My Work Report So Far..

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1. MDC

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Motivation

➢ There are several experiments going around the world in the filed of particle physics to know about the fundamental particles of the nature.

➢ Either Belle II at KEK or LHC at CERN there is only 1 energy level which is very good if you want to look for high energy particles.

➢ High Energy Experiments produce lots of background if you want to measure the low energy Particles.

➢ BESIII has the advantage to produce the particles at different energy scales and hence we have low background and precise measurement.

➢ At BESIII there are six types of particles identity has been measured precisely so far such as p, e, γ , μ , π and κ .

BESIII Experiment

◆ BESIII Experiment called as Charm Factory studies for the light and charm quark physics and tau-charm physics with the highest accuracy level.

◆ BESIII runs at 2-5GeV energy level with the luminosity $10^{33} cm^{-2} \sec^{-1}$ which is very good for low energy particles with the energy range.

◆ BESIII has the better advantage to produce the particles at different energy scales and hence we have low background and precise measurements.

◆ Three types of particle properties has been studied at BESIII such as momentum and energy conservation.

Detector at BESIII

There are 4 types of the detectors at BESIII experiment.

✓ Main drift Chamber(MDC): MDC is important for particle identification as well as momentum. It is covered by strong magnet which changes the curvature of the charged particle. By the curvature of the charged particles and with change in the momentum, we can precisley collect the information of the particles.

✓ Electromagnetic Calorimeter(EMC): This is in cylindrical shape arranged with CsI crystals to analyse the energy conservation of the particle.

✓ Time of Flight(TOF): It is important for the particle identification. It operates between $\pi \text{ and } \kappa$. When the particle hits the plastic scintillators, the plastic rod start glowing and we can predict the particle type.

✓ Muon Chamber System(MUC): It can look for the muons.

My Analysis for Exotic Decays

- I have satarted to do the analysis for the exotic decyas for
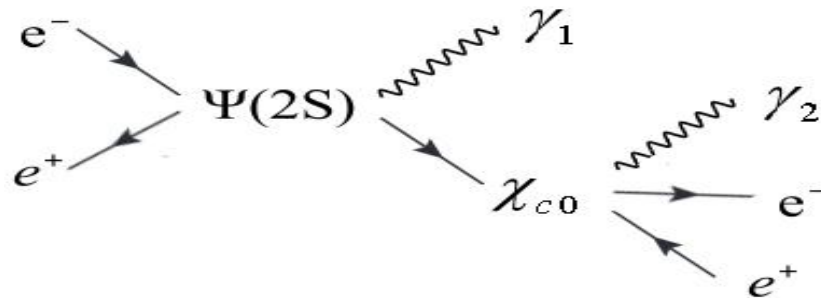
- The analysis consists of 4 steps followed by MC generations(simulations), reconstruction, preselection and selection.

- I have started with first step which is generation and generated 100MC samples.

- I have done the reconstruction for the 100MC samples and also done the preselection and generated rootfile for the plot of run number and event number.

Thank You for your attention!!!