Search for time-dependent fluctuations in cosmic rays spectra with the AMS01 detector

1. Detector pointing vs time
2. Shuttle geodetic latitude vs time
3. Time calculation algorithm

Data sample

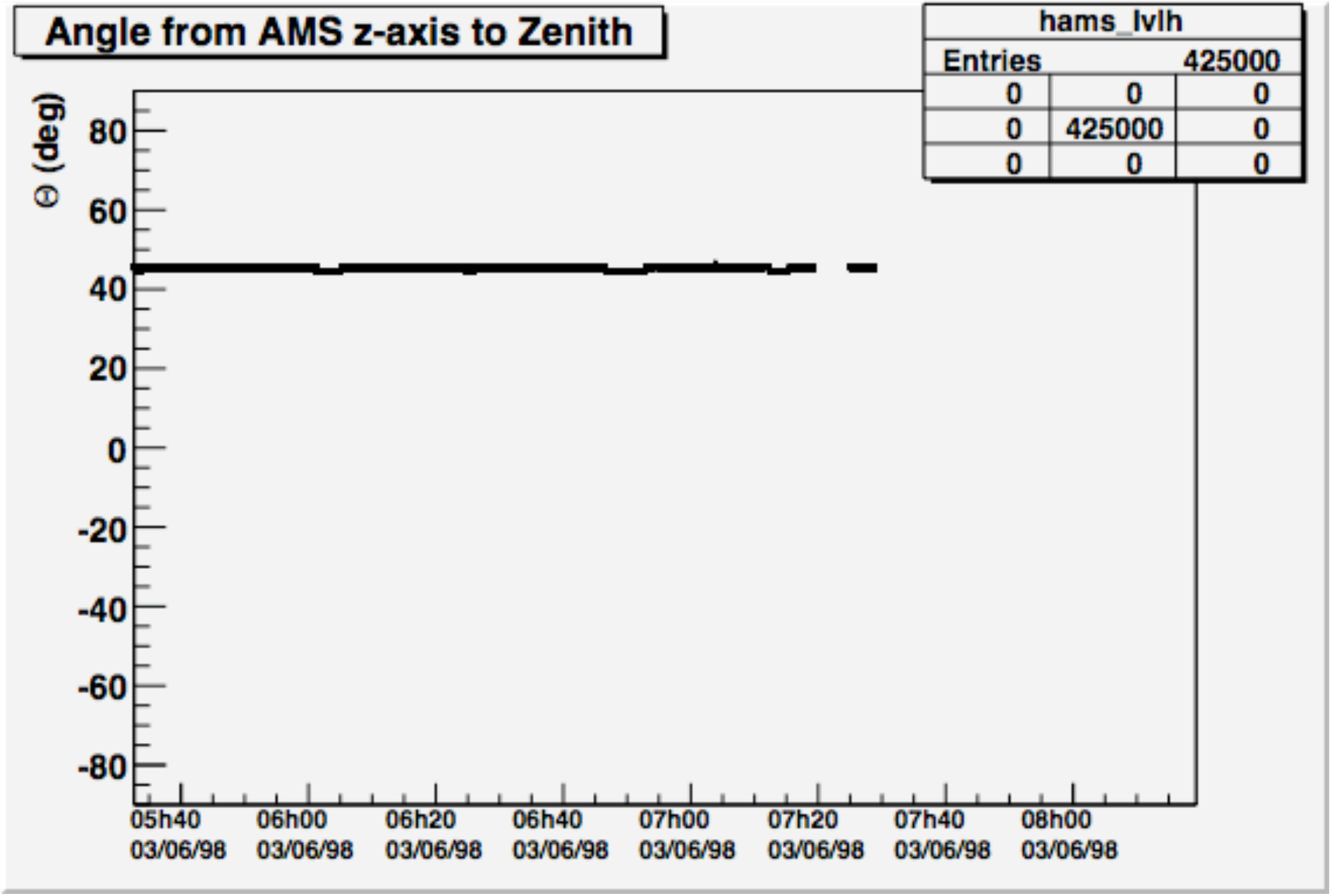
- 896851959.2.root
- 896853212.170399.root
- 896854106.57026.root
- 896854106.225969.root
- 896856114.329022.root

425 000 triggered events

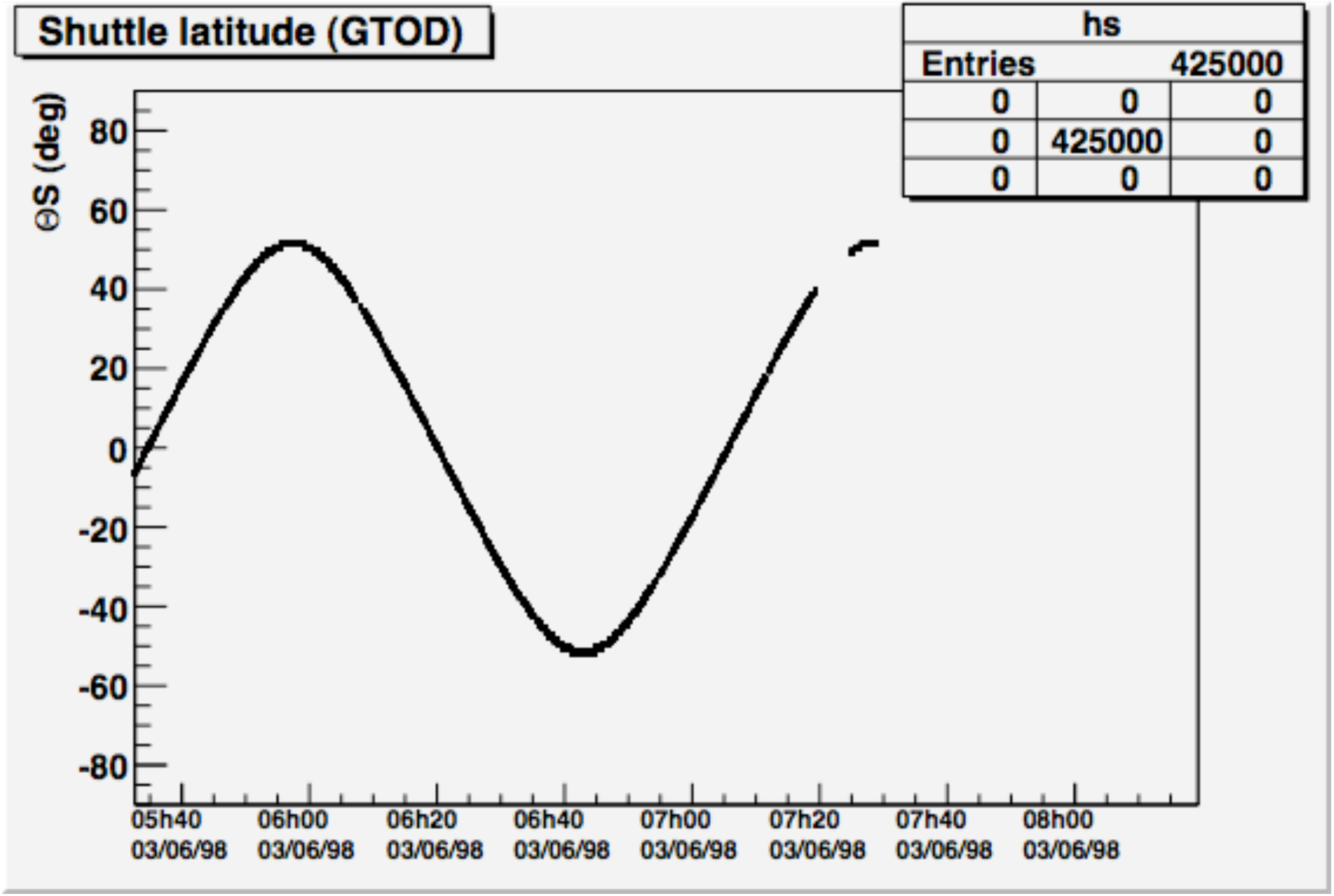
start: June 3, 1998 5h32:39 AM GMT

AMS pointing 45 deg to Zenith
Shuttle altitude: 340 Km

Detector pointing vs time:



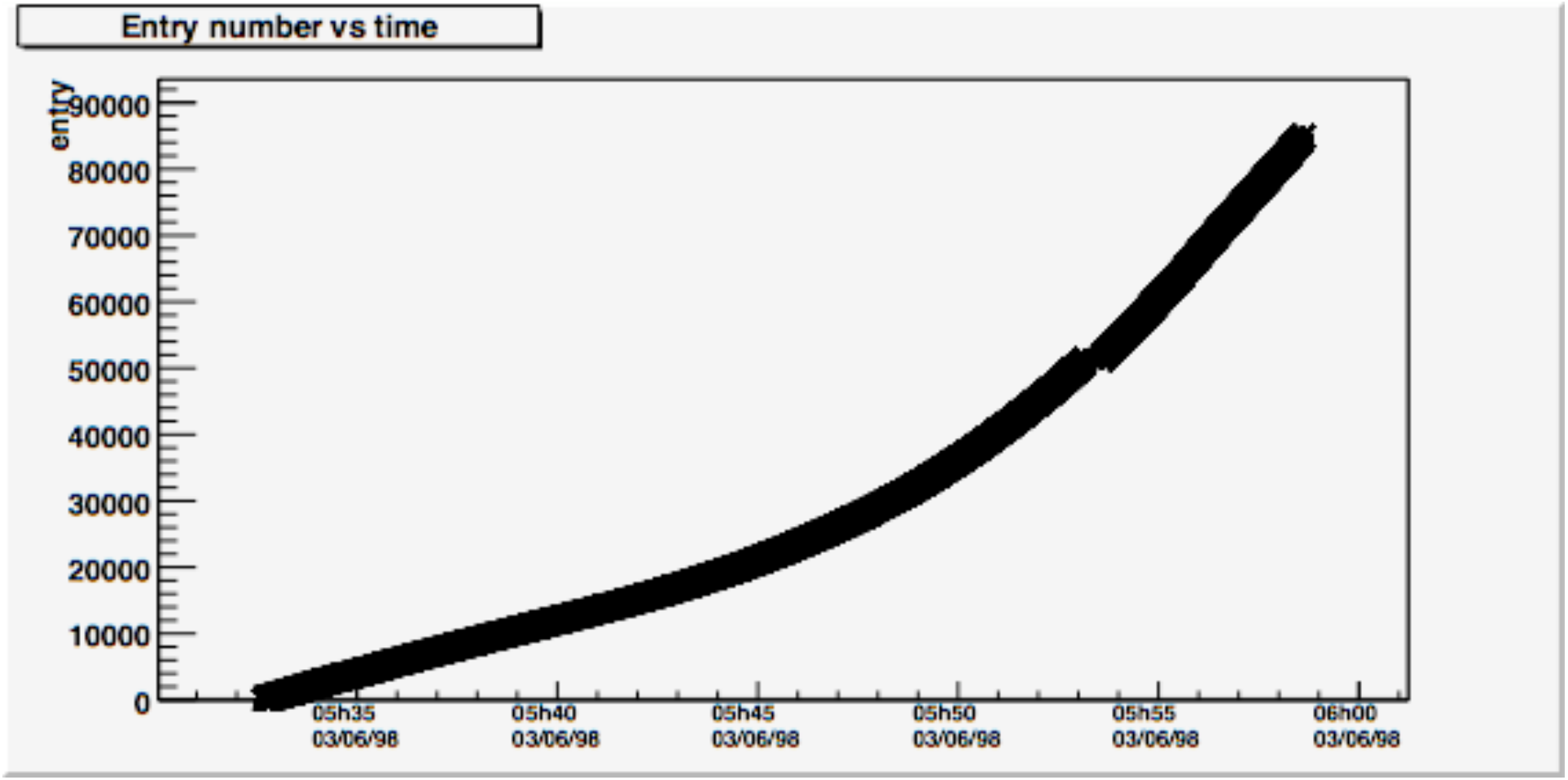
Shuttle Geodetic Latitude vs time



Time calculation algorithm:

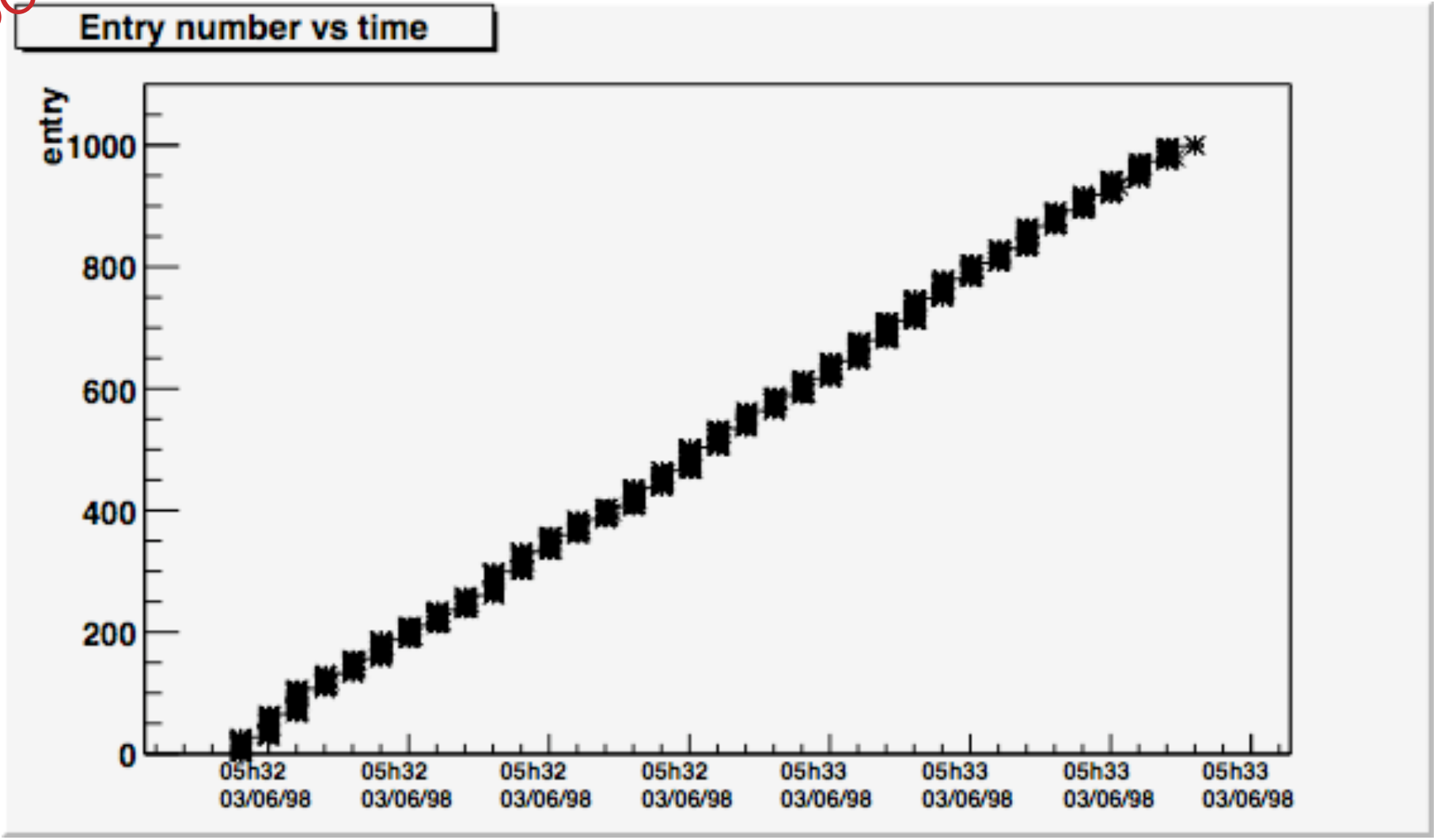
```
// Define starting UNIX TIME as AMS01 mission starting time
// (1998, June 2nd at 22h06m24s GMT)
   Int_t unix_time0 = 896825184;
   Int_t time0 = unix_time0;
   Int_t time1 = 0;

// time[0]  unix time ; time[1]  μsec time

 if (time[0]!=time0)    {  Double_t diff_time = 0;
                              time0 = time[0];            }

 else  Double_t diff_time = (time[1] - time1)/1000000.0;

     time1 = time[1];
     Double_t met_time = time[0] - unix_time0 + diff_time;
     Double_t Theta_shuttle = Thetas*180/TMath::Pi();
```

Checking time calculation algorithm (1):

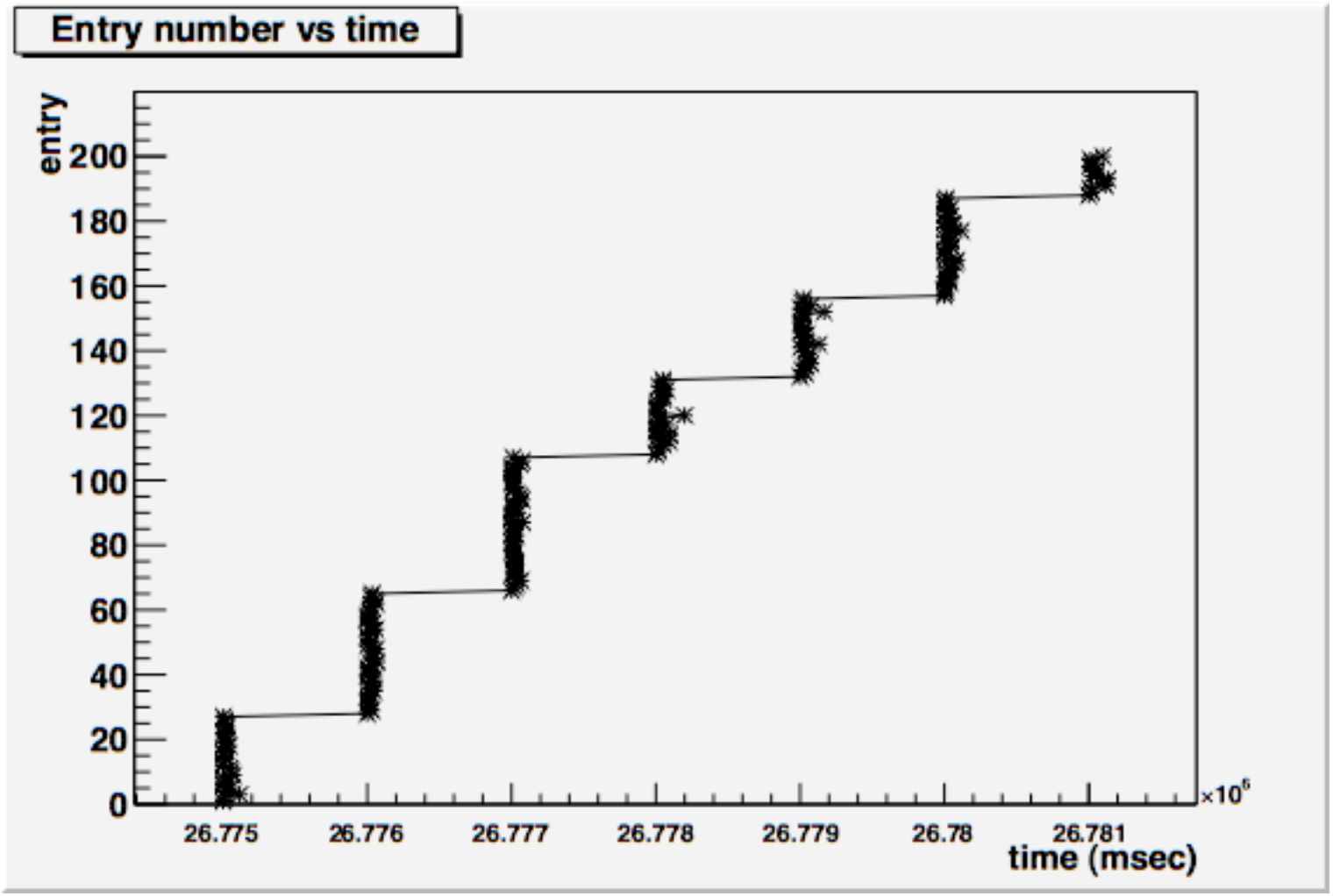


Checking time calculation algorithm (2):

ZOOM



Checking time calculation algorithm (3):



=> Precision in time ~ 1 sec