
Class For pythiaRHIC data

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Member of the class

```
class Event : public TObject {  
private:  
    TClonesArray fparticles;  
  
public:  
    unsigned short fnParticles;  
  
    // subprocess, nucleon,          thetabeam  
    // xbeamparton,                  s_hat, t_hat, u_hat  
    // trueNu, leptonphi,            SigRadCor, EBrems,  
    unsigned short fsubprocess;  
    short fnucleon;  
    short ftargetparton;  
    float fxtargparton;  
    unsigned short fbeamparton;  
    float fxbeamparton;  
    float fthetabeamprtn;  
    float ftruey;  
    float ftrueQ2;  
    float ftruex;  
    float ftrueW2;  
    float ftrueNu;  
    float fleptonphi;  
    float fs_hat;  
    float ft_hat;  
    float fu_hat;  
    float fpt2_hat;  
    float fQ2_hat;  
    float fF2;  
    float fF1;  
    float fR;  
    float fsigma_rad;  
    float fSigRadCor;  
    float fEBrems;  
    float fphotonflux;  
    float ft_diff;
```

```
class Particle : public TObject {  
private:  
    TRef fevent;  
  
public:  
    unsigned short findex;  
    short fstatus;  
    short fpid;  
    unsigned short findex_mother;  
    unsigned short findex_daughter1;  
    unsigned short findex_daughterN;  
    float fpx;  
    float fpy;  
    float fpz;  
    float fe;  
    float fm;  
    float fvx;  
    float fvy;  
    float fvz;
```

Macro

```
int write(){
    TFile *f = new TFile("test.root", "RECREATE");
    TTree *t = new TTree("t", "t");
    Event *e = new Event();
    Particle *p = new Particle();
    t->Branch("e", "Event", &e);
    for (int i = 0; i < 10; i++) {
        p->SetPx(i);
        p->SetPy(i);
        p->SetPz(i);
        e->AddParticle(p);
    }
    t->Fill();
    t->Write();
    f->Close();
    return 0;
}
```

```
int read() {
    TFile *f = new TFile("/data/work/EicC/Test/Event/macro/HERA.root");
    TTree *t = (TTree *)f->Get("Event");
    Event *e = new Event();
    t->SetBranchAddress("Event", &e);
    t->GetEntry(1);
    e->Print();
    return 0;
}
```

```
root [0] .L ../src/libEvent.so
root [1] .L BuildTree.cpp
root [2] BuildTree("HERA.out","HERA.root",10)
Start Processing
Time used: 0.0106242 s
Total 10 events are processed
Time used per event: 0.00106242 s
```