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Subject: How to get BES3 MC truth data?  
Posted by [Xia Wan](#) on Tue, 17 Feb 2009 10:04:53 GMT  
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Subject: Re: How to get BES3 MC truth data?  
Posted by [Cristina Morales](#) on Tue, 02 Aug 2011 09:10:33 GMT  
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Hi,

this is how I asked for the 4-momentum true values of my particles:

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```
SmartDataPtr<McParticleCol> mcParticles(eventSvc(),"/Event/MC/McParticleCol");
if( ! mcParticles ){
    log << MSG::ERROR << " Unable to retrieve McParticleCol" << endl;
    return StatusCode::FAILURE;
}
```

```
for( McParticleCol::iterator it_mc = mcParticles->begin();
    it_mc != mcParticles->end(); it_mc++ ){
    cout<<"PID: "<<(*it_mc)->particleProperty()<<" , px: "<<
    (*it_mc)->initialFourMomentum().px()<<" , py: "<<
    (*it_mc)->initialFourMomentum().py()<<" , pz: "<<
    (*it_mc)->initialFourMomentum().pz()<<" , E: "<<
    (*it_mc)->initialFourMomentum().e()<<" , theta: "
    <<(*it_mc)->initialFourMomentum().theta()<<endl;
```

```
int PID          = (*it_mc)->particleProperty();
double mcpX     = (*it_mc)->initialFourMomentum().px();
double mcpY     = (*it_mc)->initialFourMomentum().py();
double mcpZ     = (*it_mc)->initialFourMomentum().pz();
double mcE      = (*it_mc)->initialFourMomentum().e();
```

```
m_mcPid        = PID;
m_mcP4x        = mcpX;
m_mcP4y        = mcpY;
m_mcP4z        = mcpZ;
m_mcP4E        = mcE;
```

```
m_mc->write();
}
```