



# First look at PID software for a generic RICH

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# Generic RICH

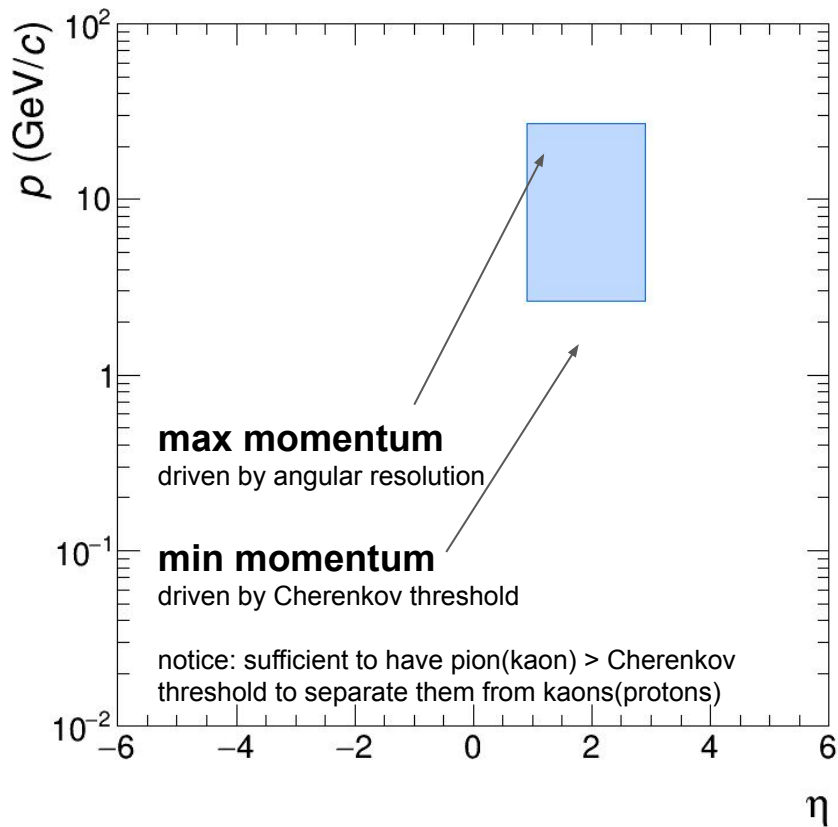
- class written following the prescription on the PID base class
  - see presentation from T. Hemmick at fist PID meeting
  - tarball is attached to the INDICO page of the meeting
- a generic RICH is defined by (forward RICH case, but also for barrel)
  - distance from the IP
  - refractive index of the radiator
  - angular resolution (overall, including instrumental and physics effects)
  - inner radius
  - outer radius
  - magnetic field
- similarly a generic TOF is defined (barrel and forward cases supported)

# Forward RICH

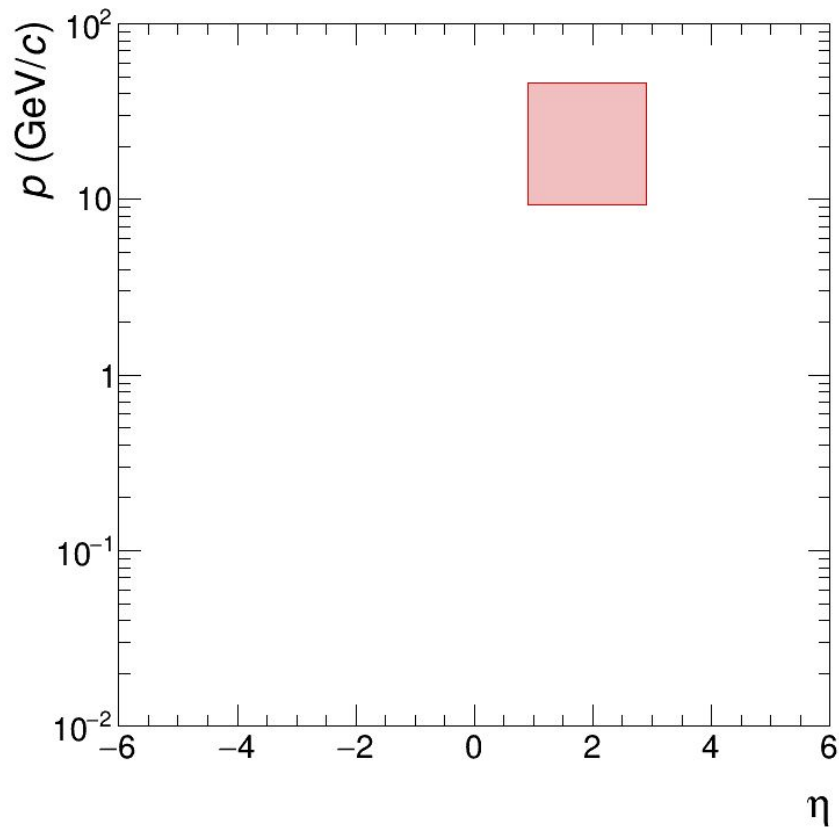
```
auto forwardRICH = new genericRICH();
forwardRICH->setType(genericDetector::kForward); // type of detector
forwardRICH->setPositionZ(200.); // position [cm]
forwardRICH->setRadiusIn(20.); // inner radius [cm]
forwardRICH->setRadiusOut(200.); // outer radius [cm]
forwardRICH->setIndex(1.0014); // refraction index
forwardRICH->setSigma(1.e-3); // angular resolution
forwardRICH->setMagneticField(2.); // solenoid field [T]
```

# Forward RICH

$\pi/K$



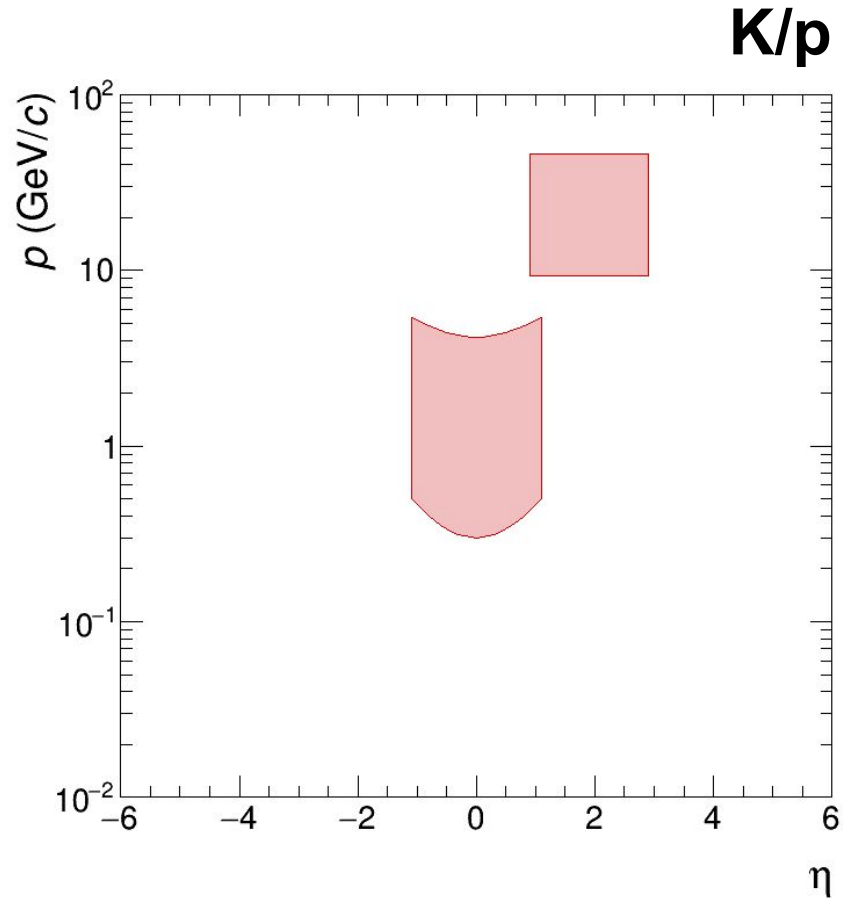
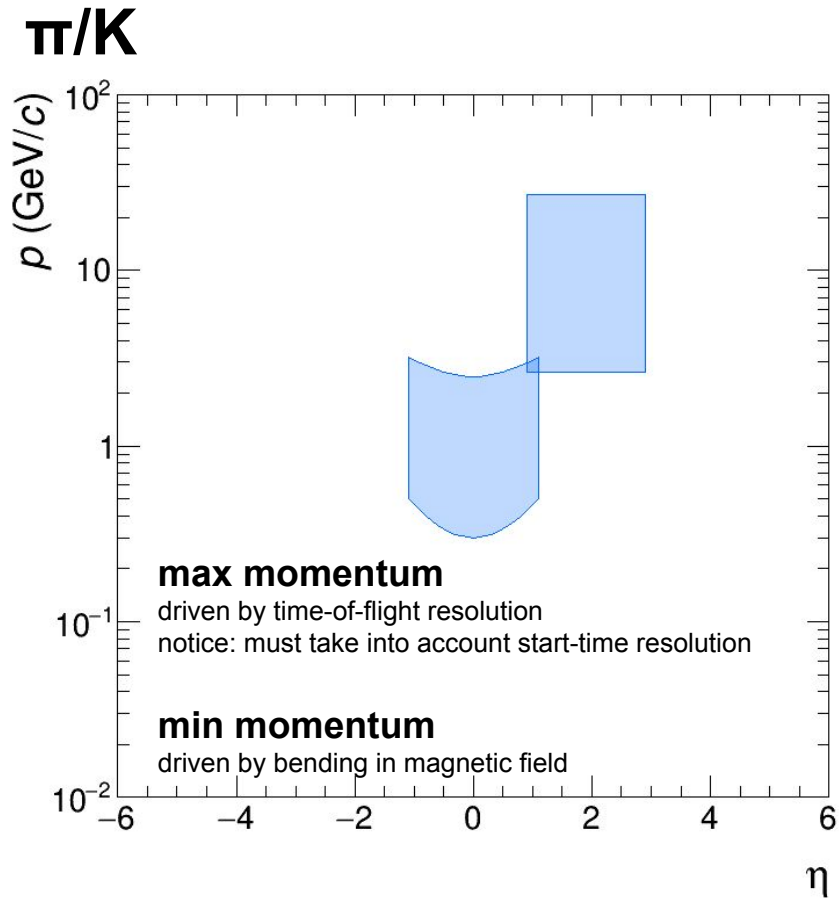
$K/p$



# Barrel TOF

```
auto barrelTOF = new genericTOF();  
barrelTOF->setType(genericDetector::kBarrel); // type of detector  
barrelTOF->setLength(150.); // length [cm]  
barrelTOF->setRadius(100.); // radius [cm]  
barrelTOF->setSigma(0.020); // to-flight resolution  
[ns]  
barrelTOF->setMagneticField(2.); // solenoid field [T]
```

# Barrel TOF

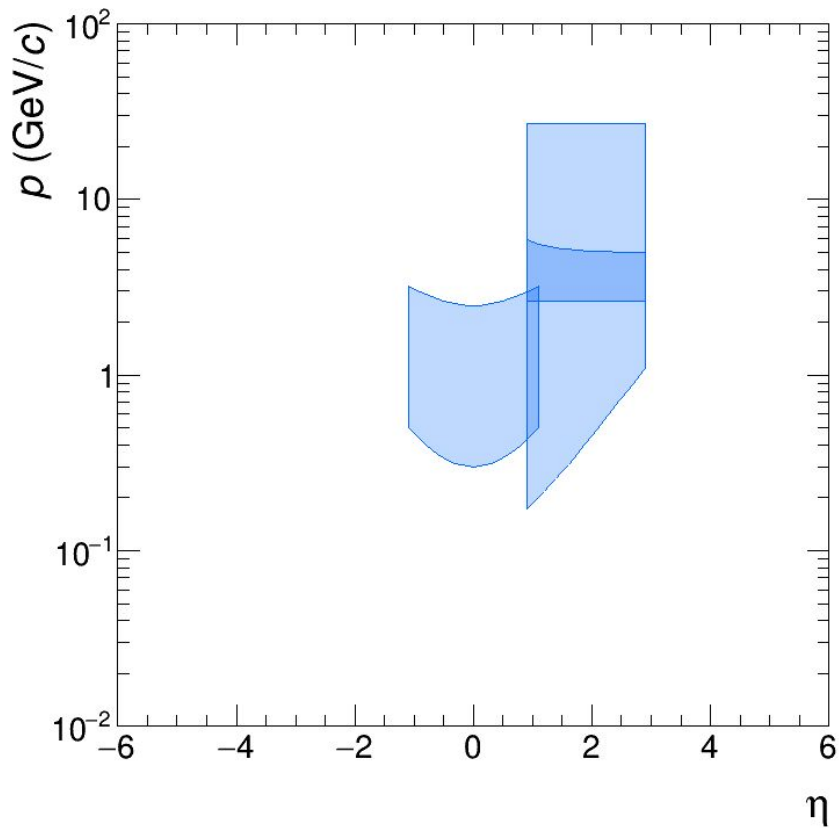


# Forward TOF

```
auto forwardTOF = new genericTOF();  
forwardTOF->setType(genericDetector::kForward); // type of detector  
forwardTOF->setPosition(400.); // length [cm]  
forwardTOF->setRadiusIn(40.); // radius [cm]  
forwardTOF->setRadiusOut(400.); // radius [cm]  
forwardTOF->setSigma(0.020); // to-flight resolution  
[ns]  
forwardTOF->setMagneticField(2.); // solenoid field [T]
```

# Forward TOF

$\pi/K$



$K/p$

