STAR Detector:

A SIMPLE OVERVIEW.

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Table of Content

STAR Detector

- The STAR (Solenoidal Tracker at RHIC) is one of two still standing experiments in the Relativistic Heavy Ion Collider
- Main Purpose:
  - Study the qualities of the Quark-Gluon Plasma (QGP)
- To accomplish this, STAR has a number of Detectors.

Forward Silicon Tracker (FST)

- Closest to the Tube
- Highest Quality
- Very Expensive
- More in-depth functionality?

Time Projection Chamber (TPC)

- Makes up the majority of STAR
- Uses gas for the detection of charged particles
- Ionization is the main way of detection

Time of Flight (TOF)

- Helped in improvement of identification
- Gas Detector
- MRPC(Multigap Resistive Plate Chamber)
- Exact functionality?

Muon Telescope Detector (MTD)

- Measures μ pairs
- Used to identify the creation of J/ψ
- QGP Formation

Heavy Flavor Tracker (HFT)

- No longer in STAR
- Detects Heavy Quarks
  - Charm & Bottom
- Usually in $c\ \bar{c}$
- High Resolution

Data Acquisition(DAQ)

- Act as triggers for the amount and type of data that we want to collect
- Collection of Coordinated Detectors
- Data Collection is greatly improved.

Small-strip Thin Gap Chambers (sTGP)

- Forward Detector
- Wire planes that make a Three-Dimensional Image in a gas medium.
- Used for tracking

Conclusion

- STAR has a lot of detectors, too many to be summarized in a simple presentation.
- STAR has let us advance our understanding in the QGP and its properties
- Perhaps more?
- Future?