Development of a Coincidence Measurement System for Scattered and Decay Particles Using a Streaming DAQ and Digitizers

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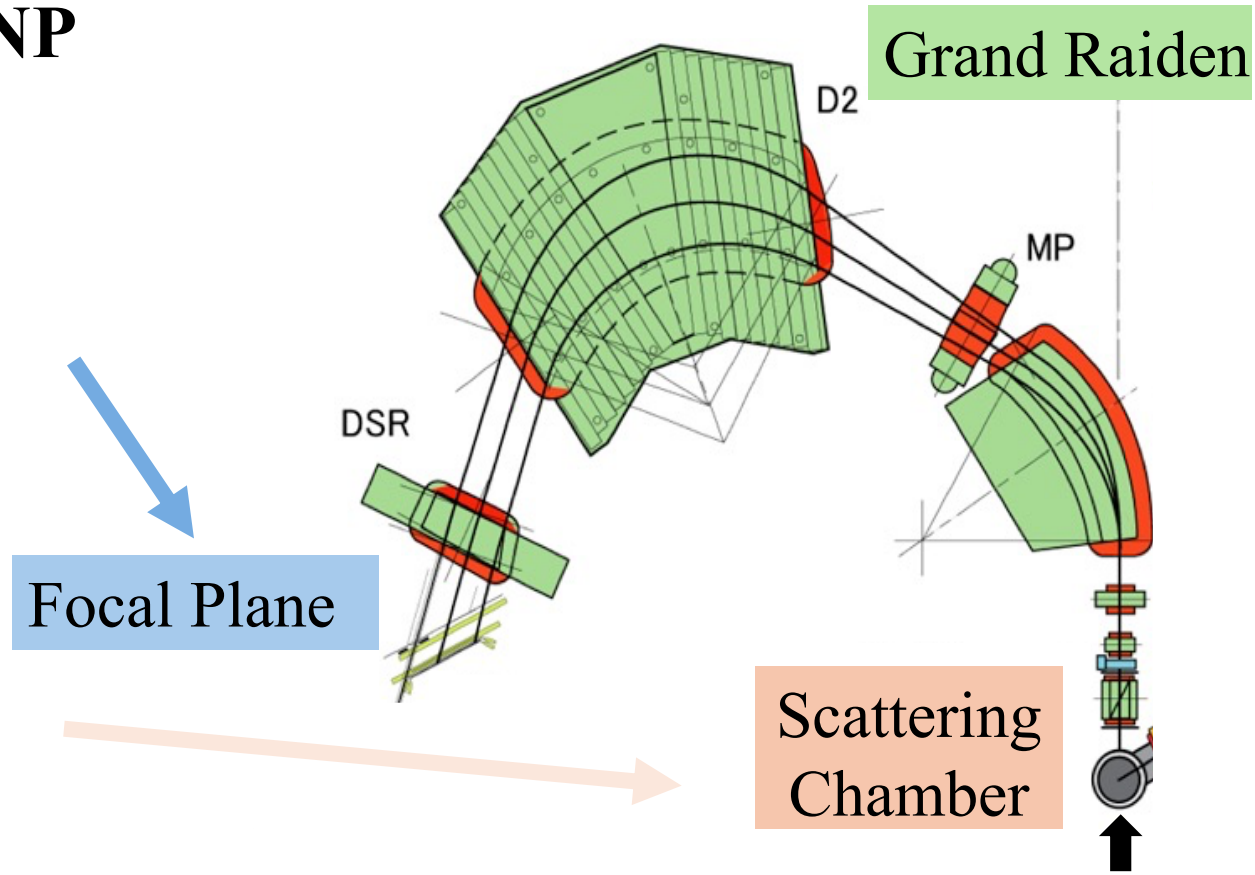
■ Requirement @Grand Raiden at RCNP

Drift Chamber and Plastic Scintillator
- ➢ **Streaming DAQ**
- ➢ Measure Scattering Particle
- ➢ Define Excitation Energy

Silicon Detector
- ➢ **Triggered DAQ**
- ➢ Measure Decay Particle
- ➢ Paulse Shape Analysis



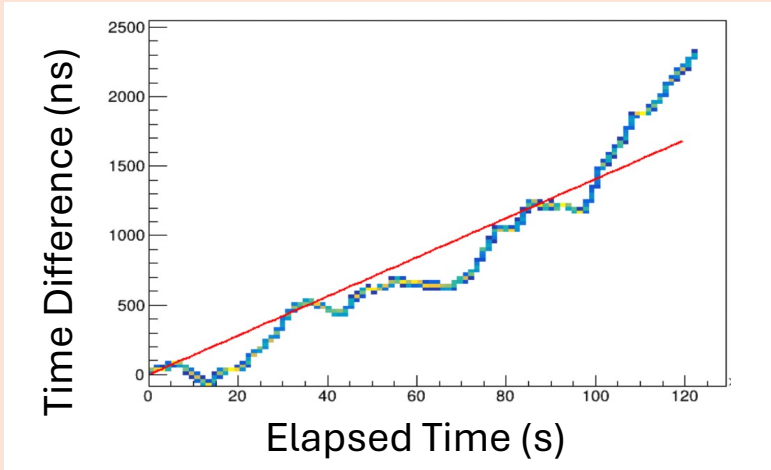
Development the coincidence method to synchronize both DAQ system

Synchronization Methods

1. The focal plane detector generates a trigger to prompt the silicon detector
2. Timestamp are generated within each DAQ System by using the individual internal clocks of the AMANEQ and V1730SB
3. Reconstruct events using timestamp

Issue: Timestamp Drift between DAQs

- Frequency Difference: ~490 ppm
- Fluctuation: Several us



In the Poster Session

✓ Event Synchronization Algorithm Under clock Drift

✓ Evaluation of the whole DAQ System