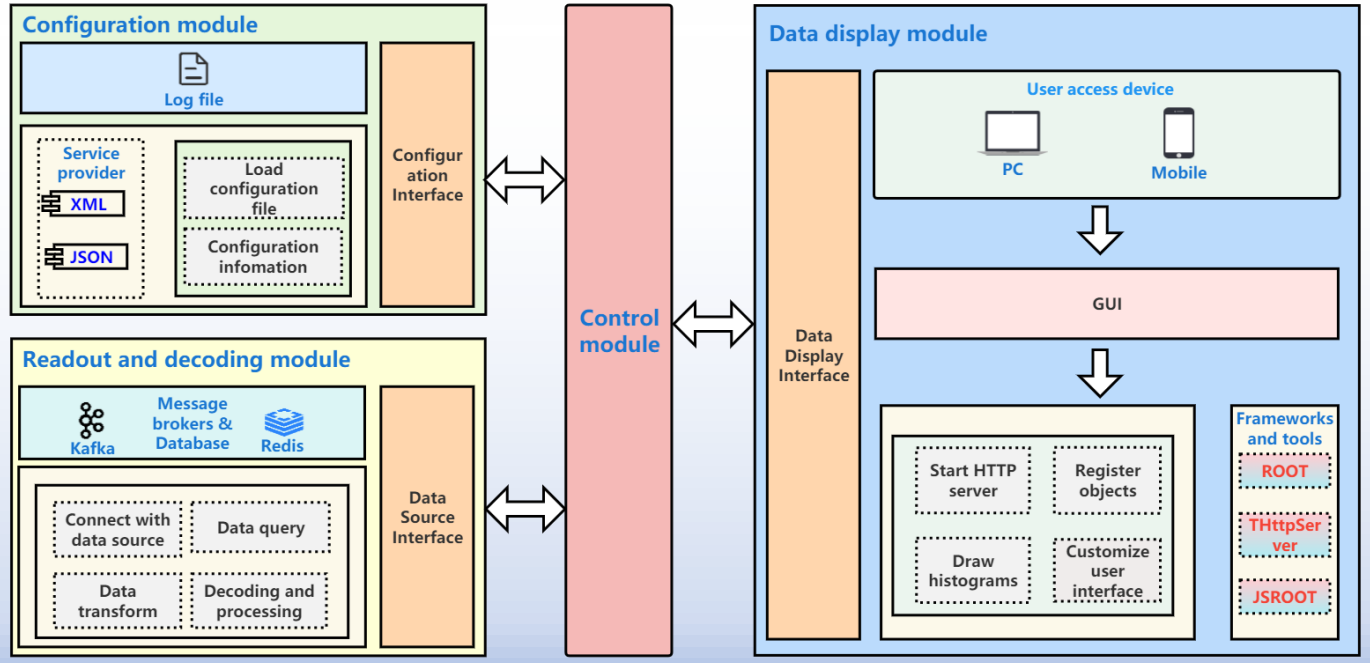
A ROOT-based General Online Data Visualization System

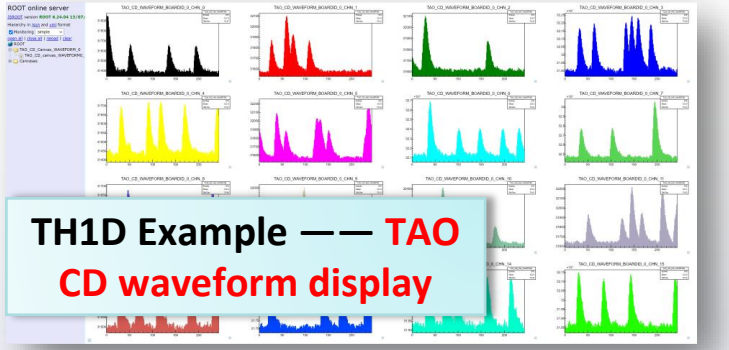
Shuihan Zhang, Institute of High Energy Physics

- **ROOT-based general online data visualization system (ROBOT)**
- **Purpose:** **Generality and scalability**
- **Integration test & Operation:** Real-time online data monitoring
- **Completed system design and major module implementation**

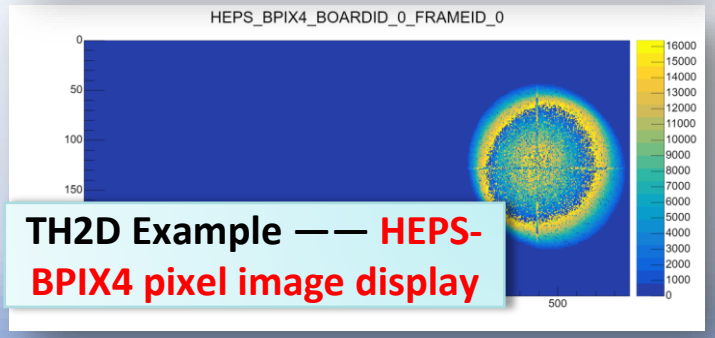
Purpose:

- ✓ Quick implementation and integration
- ✓ **Detector / Electronics independent**
- ✓ Online real-time monitoring
- ✓ **ROOT & JSROOT** based





TH1D Example —— TAO CD waveform display



TH2D Example —— HEPS-BPIX4 pixel image display

Applied to the joint test and JUNO on-site installation

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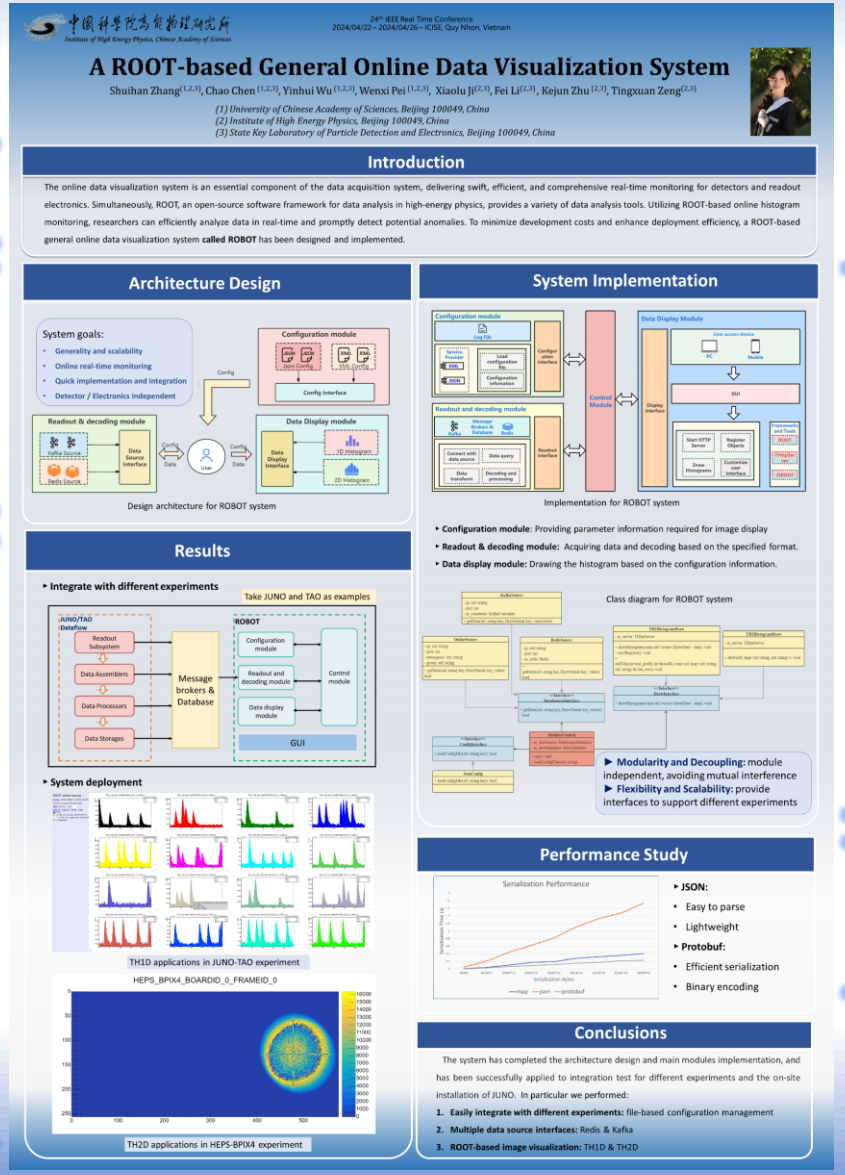
Motivation and Background

System Design Scheme

Deployment and Display Interface



- ✓ Easily integrated by different experiments: file-based configuration management
- ✓ Multiple data source interfaces: Redis & Kafka
- ✓ ROOT-based image visualization: TH1D & TH2D

System Implementation

Performance Study

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