



Contribution ID: 96

Type: **Poster presentation**

Application of compression algorithm in data acquisition and Storage system for EAST

With the in-depth study of plasma experiment in East device, the long pulse discharge experiment has gradually become a conventional discharge experiment, and the pulse discharge time of each pulse reaches hundreds of seconds or even thousands of seconds. For diagnostic data acquisition, especially for the diagnostic data acquisition system with high signal quantity and signal bandwidth, the continuous large amount of data throughput puts great pressure on the performance of data transmission and data storage.

In the research of the new acquisition system, the data compression technology is introduced into the data acquisition and storage system to improve the efficiency of data transmission and the utilization of data storage. Through the research and analysis of compression algorithm, a prototype system of data acquisition and storage based on lz4 compression algorithm has been developed, and the performance parameters has been verified on EAST device. The test results show that the performance has been greatly improved.

This paper describes the comparative analysis of compression algorithms, the design and development of prototype system, and analysis of the test results.

Minioral

No

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No

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No

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Presenter: Dr LI, Shi

Session Classification: Poster Session - A

Track Classification: Data Acquisition System Architectures