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Design and Implementation of EAST Data Visualization in VEAst System

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The Experimental Advanced Superconductive Tokamak (EAST) Device began operation in 2006. EAST's inner structure is very complicated and contains a lot of subsystems which have a variety of different functions. In order to facilitate the understanding of the device and experimental information and promote the development of the experiment, the virtual EAST system has established an EAST virtual reality scene in which the user can roam and access to information by interacting with the system. However, experiment-related parameter information, diagnostic information and magnetic measurement information are displayed in the form of charts, figures, tables and two dimensional graphics. In order to express the experimental results directly, three-dimensional data visualization results are created using computer graphics technology. Data visualization is the process of visualizing data based on the characteristics of the data, the selection of the appropriate data structure and the proper sequence of visual pipeline. We use the visualization toolkit(VTK) to realize the data visualization in VEAst system and give the detailed steps of data visualization of plasma column, electron cyclotron emission diagnostic and plasma magnetic field. Besides, the general format is defined for the users to organize their data so that they can visualize their data in our system.

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