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Browser-based visualization framework Tracer for Outreach & Education

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Education & outreach is an important part of HEP experiments. With outreach & education, experiments can have an impact on the public, students and their teachers, as well as policymakers and the media. The tools and methods for visualization enable to represent the detectors' facilities, explaining their purpose, functionalities, development histories, and participant institutes. In addition, they make it possible to visualize different physical events together with important parameters and plots for physics analyses. 3D visualization and advanced VR (Virtual Reality), AR (Augmented Reality) and MR (Mixed Reality) extensions are the keys for successful outreach & education. This paper describes requirements and methods for the creation of browser-based visualization applications for outreach & education. The visualization framework TRACER is considered as a case study.

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