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## Hybrid Rendering System for Particle Collision Experimental Data Visualization

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The main problems in visualizing the particle collision events are the amount of data needed for good visualization and the need for high-performance graphical hardware. To overcome the need of sending the large amount of data to the end-user as well as need for high-performance graphical hardware, we propose the hybrid rendering solution which renders the final image in two parts: (1) highly interactive visualization of basic experiment geometry rendered on client side and (2) high quality render of event details, which is rendered on server side. The final render image is combined from both images with use of different fusing techniques using depth buffer or importance buffer. The proposed approach solves multiple issues: (1) the need for sending a large amount of data to the client for purpose of visualization, (2) the need for high-performance graphical hardware on the client side, (3) allows the use of more complex rendering techniques and (4) improves the interactivity of the visualization.

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### Speaker bio:

Ciril Bohak obtained his B.Sc., M.Sc., and Ph.D. in Computer and Information Science at the University of Ljubljana, Slovenia. His main research topics are Computer Graphics and Data Visualization. He is in charge of Med3D project - a web-based medical data visualization framework with support for remote collaboration and VR. He is also collaborating on LiDAR/LADAR point cloud data visualization with Kyungpook National University from South Korea.

Speaker's web page

**Authors:** Dr BOHAK, Ciril (University of Ljubljana, Faculty of Computer and Information Science); MAROLT, Matija (University of Ljubljana - Faculty of computer and information science)

**Presenter:** Dr BOHAK, Ciril (University of Ljubljana, Faculty of Computer and Information Science)

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