Cloud display

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Volumetric displays form graphics by volumetrically generating voxels, thus directly forming graphics that satisfy human depth perception in the real world without wearable devices such as head-mounted displays. Among the various implementations of volumetric displays, the formation of graphics by light scattering points is an effective method for color.

In this presentation, we introduce a volumetric display using femtosecond-laser-condensation for generating clouds as light scattering voxels. In this display, cloud voxels are generated by irradiating a laser onto a container filled with ethanol supersaturated vapor of polar molecules, known as a cloud chamber. We evaluated the size and formation process of the cloud voxels. Furthermore, we demonstrated a rendering color graphics using the cloud voxel and introducing RGB laser illumination.

Short Bio:

Kota Kumagai is an assistant professor in Center for Optical Research and Education (CORE) of Utsunomiya University since 2020. He received a Ph.D. in Engineering from Utsunomiya University with a President's Award in 2019 via JSPS Research Fellow DC1 and research inter at Swinburne University of Technology. From 2019 to 2020, he has worked for R&D Center of Sony Corporation. His research interest is an intersection of optics and information engineering, and recently, focused on volumetric display and computational imaging with femtosecond laser-matter interactions. He received a Good Design Award 2015 and a JSPS Ikushi Prize in 2018.