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Title: Dataset from 3D FLASH Computation of National Ignition Facility Shot N210201-001

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Intended for: Providing dataset from 3D FLASH computation for external collaborators (SciVista) working on virtual reality visualization tools

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Dataset from 3D FLASH Computation of National Ignition Facility Shot N210201-001

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This data comes from a 3D FLASH [Fryxell et al. *ApJS* **131**, 273 (2000); Tzeferacos et al. *HEDP* **17**, 24-31 (2015)] computation of a cylindrical implosion experiment performed at the National Ignition Facility (shot number N210201-001). FLASH is an open-access radiation-hydrodynamics code being used to simulate high-energy-density systems. The dataset consists of a total of 61 HDF5 output files, representing the state of the system at discrete points in time between 0 ns and 30 ns (data output every 0.5 ns). Each HDF5 file contains information for several state variables:

- “ablt” is the concentration of the ablator material (plastic, CH)
- “cham” is the concentration of the background chamber material (helium)
- “mark” is the concentration of the marker material (aluminum)
- “foam” is the concentration of the central foam (plastic, CH)
- “dens” is the mass density [g/cm^3]
- “depo” is instantaneous energy per unit mass [erg/g] deposited by the laser drive
- “pres” is the material pressure [erg/cm^3]
- “tele” is the electron temperature [K]
- “tion” is the ion temperature [K]

The data is given for every cell in the computational domain. The cubic domain extends over $(x,y,z)=[-3.072 \text{ mm}, 3.072 \text{ mm}]$, but the cell count (and hence HDF5 file size) changes between timesteps due to the adaptive mesh refinement. The minimum cell size used in the computation here is 8 microns. A representative volume rendering using the ParaView visualization software at $t=25 \text{ ns}$ is shown below. The left image shows a 3D view, while the right images show axial slices at $\pm 350 \text{ microns}$.

