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This video visualizes fog machine vapor through the light from a projector. The purpose was to light up the fog in a way that allowed you to visualize the physics and instabilities.

The set up we used was two fog machines that were blowing vapor out and those were set up to the right side of the camera. We then took turns holding the projector straight up to down creating light rays that went through the fog allowing you to visualize it. We projected a single image on the projector and did this in a completely closed dark room allowing the fog to build up over time. This allowed us to visualize vortex loops, buoyancy, diffusion, and other phenomenon. The vapor is heated up which gives it buoyancy but over time gravity will start to settle the vapor towards the ground. The vapor is also diffusing over time to create a less dense cloud as it all spreads out.

We used light from a projector to visualize the movement of fog from a fog machine going through the light. The somewhat air tight room allowed for the room to fill up with smoke along with keeping all extra light out. The projector mostly was used from down to up with the light pointing at the ceiling so that the camera could capture the vapor in the vertical line of light. There was no outside light used besides the projector.

I choose to do a video because it allows you to see the movement of the fog overtime. The size of field of view was from 5 inches with the macro lens to about 3 feet with the wide-angle view.

- Size of the field of view: 4 inches – 3 feet
- Distance from object to lens: 1 to 2 feet
- Lens focal length and other lens specs: 100 mm EF f/2.8 Macro USM and EF-S 18-135 mm f/3.6-5.6
- Type of camera: Canon 7D DSLR
Final Video: 1920 x 1080
- Exposure specs:
Aperture: 5.6
Frame rate: 24 fps

ISO setting: 3200 ISO

I choose an aperture of 5.6 to get the light projected on the fog to be fully exposed. I had to then resort to using a higher ISO in these low light conditions to get my image fully exposed.

- Photoshop or Final Cut processing: I just edited the video clips in final cut pro by adding transitions between clips (cross-dissolves) and by adding a sound track.

The video I made reveals some of the physics of the fog machine vapor. I like that this video reveals the physics through an abstract idea. I dislike that the macro lens is super hard to focus on fog machine smoke in such a dark area. I think the fluid physics are shown well by the fog machine smoke but could be shown better by some slow-motion camera to really slow the visualization of the fog down. I fulfilled my intent for visualizing fog machine vapor but I would like to improve it by creating certain types of flow. In the future I would take this in a direction of projecting videos onto the vapor rather than just still images.