

## **Cloud Second**



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MCEN-4151

Flow Visualization

A Course in the Physics and Art of Fluid Flow

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## Background



Figure 1. The image of Cumulus Clouds and Stratus Clouds

The photo shown in the figure 1 is taken for the second cloud assignment. The picture shows the mixture of Stratus and Cumulus on a windy day. The picture was taken on March 30<sup>th</sup> 2018 where the wind helped the picture to show off the cloud's behavior on a windy day. The objective of the First Cloud assignment was to take a beautiful photo of cloud flow visualization, to creatively design a setup to photograph the flow of cloud.

## Experimental Setup, Physics, and Chemistry

The photo shows the Stratus cloud, which exists below 6,000 feet and Cumulus cloud, which exists below 6,000 feet as well. Stratus clouds are low-level clouds that is characterized by horizontal layering with a uniform base, which in this photo, the clouds were

separated more due to a high velocity of wind. Cumulus clouds are puffy clouds that look like a floating cotton, which are lined up perfectly on the left side of the photo. The Stratus clouds on the right look like a hurricane that shows an amazing flow visualization of the cloud moving due to wind.

### **Visualization Technique**

The image was taken with Samsung Galaxy 8 with 4.25 mm of focal distance, aperture of F1.7, exposure time of 1/4608 seconds, and ISO of 50. The photo was taken at the Flagstaff mountain at around 4PM. With the editing, I have set the brightness to 70, and the contrast to be 80.

### **Conclusion**

The image contained a good physics and aesthetic vision of the flow visualization. The wind was perfect enough to produce a great see-through of Cumulus and Stratus clouds. The weather was also nice that showed the artistic intent of the photograph.