

Abstract Submitted
for the DAMOP15 Meeting of
The American Physical Society

Resolving Airborne Particulate Concentration Inhomogeneities with a Schlieren Optical Technique ALEXIS PAYNE, ALEM TEKLU, MIKE LARSEN, College of Charleston, Department of Physics and Astronomy, COLLEGE OF CHARLESTON, DEPARTMENT OF PHYSICS AND ASTRONOMY TEAM — Our project explored the influence turbulence has on particulate clustering via use of the Schlieren Photographic technique. We successfully constructed the Schlieren optical set up, which consisted of a HeNe laser and a high speed CCD. We obtained data of turbulence of varying degrees affecting smoke particulates. The diffraction pattern in the data was clearly evident. We successfully denoised the images and calculated the 2D Fast Fourier Transform of the data. Analysis of the data has revealed interesting connections between turbulence and particle clustering.

Alexis Payne
College of Charleston, Department of Physics and Astronomy

Date submitted: 02 Feb 2015

Electronic form version 1.4