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Microscale Correlation of Rainfall Characteristics with Lightning
BARRET VISS, ARNOLD SIKKEMA, Physics & Astronomy Department, Dordt College, Sioux Center, IA — It has been observed that it sometimes seems to rain harder a few seconds after a lightning strike (so-called "rain gush lightning" phenomenon). The conventional way to study this type of phenomena is with radar. To investigate this in a more direct way, an apparatus was designed and constructed which uses a digital video camera and a strobe light to monitor a region of rainfall near the ground. Individual frames have been examined and seen to be informative, and an image processing algorithm is being developed which will extract the data from every frame of the video clip. Besides its use for this particular investigation, the apparatus has proven useful in general, as it provides data for the specific diameter and velocity of every drop passing through the region. The standard measurement of rain flux can be derived from this data.

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