An Improved Protocol for Precipitation Measurement  
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**Abstract**

This paper provides an alternative protocol for measuring precipitation. The protocol uses a formula (absolute value of voltage/area of a single element of precipitation)/duration of weather event to produce a numeric value with the units of watts, though it is designated as RPU (rain power units) for sake of clarity. This formula takes into account the correlation between variables, such that a short precipitation event with large droplets and high impact force will not produce the same RPU value as a long precipitation event with similar precipitation element characteristics. Voltage, which was directly proportional to impact force, was measured with a mounted piezoelectric component, while a flour covered tray captured the size of the droplets at the moment of impact. While the RPU value can be calculated for an individual drop, it is better to apply the formula based on the overall average values since it is more useful to look at the weather event as a whole, rather than individual precipitation elements.

**Discipline:** Environmental Science