



Image processing in automated measurements of raindrop size and distribution

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Abstract

A rapid method for evaluating raindrop size and size distribution has been developed. It is based on image processing with correlation analysis in the frequency domain. This technique has the advantage of being a direct measurement method that automatically identifies and counts raindrops. Calibration was carried out using a standard image with known raindrop sizes. Drop sizes, ranging from less than 0.1 to over 85 μ m in diameter, have been automatically recognized and successfully measured. Error was not larger than 1.5%. In addition, practical examples of use of the method for determining characteristics of raindrops in rainfall are presented. © 1999 Elsevier Science B.V. All rights reserved.

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1. Introduction

Raindrop impact has been demonstrated to have an important effect on soil erosion, aggregate breakdown, surface sealing, and infiltration (Laws, 1940; Hud-

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