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## A simplified method for the solar reflectance of a finite surface in field

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Abstract: Albedo is the fraction of the incident solar radiation that is reflected by a surface. The albedo of an infinite surface can be measured by the using aircraft or satellite-based tools or by the ASTM E1918-06. Measuring the albedo of a finite surface, however, is relatively complicate. Here we introduce a new simplified pyranometer-based method to measure the albedo of a finite surface. The method assembles a baffle with retro-reflective interior to force the down-facing pyranometer receiving the reflected radiation from the target only. The measurement completes by two steps with one leaving the target uncovered and the other covering the target with a spectrally-nonselctive reference mask, while reading the incident and reflected radiations simultaneously. The reference mask is used for calibration, which negates the impact of the instrument shadow on the measurement errors. We use the proposed method to measure the albedo of typical land covers and we found the observed albedo agrees highly with the albedo measured by the ASTM E1918-06. The

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