

Measurements of mirror soiling at a candidate CSP site

D. J. Griffith, L. Vhengani, M. Maliage
CSIR, P O Box 395, Pretoria 0001, South Africa

Abstract

Loss of mirror reflectivity due to soiling at Concentrated Solar Power (CSP) plants is a significant consideration for design and operation of the plant. Increasingly, a bankable case for establishment of a new plant will include an evaluation of the cleanliness of the proposed site in addition to the solar resource assessment. The nature and quantity of atmospheric fallout is site specific and generally has a seasonal cycle. We describe an effort which has been underway for more than a year now for a candidate CSP site cleanliness assessment using dust buckets and loss of reflectivity on mirror samples installed at the site. The loss of reflectivity due to soiling was measured on a monthly cycle using a portable, imaging instrument that was designed and built for this purpose. The design of the instrument is described and typical results are presented.