

## Modifications to the Kwajalein BSRN Site December 2004

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An automated washer and ventilation system was installed at the Kwajalein Baseline Surface Radiation Network (BSRN) site during January 2004 and modifications to the installation were made during a followup trip to the site December 2004. The basic principle of the system remained unchanged. A water reservoir is used to supply a water pump that is switched on and off via software commands in the onsite data acquisition system, and a central blower system is operated continuously to bathe the instrument windows and domes with filtered interior air that is slightly cooler and drier because of the air-conditioned space where the air blower is located. Plastic PVC pipe is used to bring the air out of the building to the where the instruments are located. The initial version only used the interior air from the blower to ventilate the direct-beam sensors consisting of two pyrheliometers and a four-channel sunphotometer. Modifications to the system in December 2004 enabled the blower air to be used for ventilating the pyrgeometer and diffuse sensors located on the tracker. This modification required disabling of the original pyranometer and pyrgeometer ventilation fans and blocking the original air flow path through the ventilator. A new air inlet was then made in the transparent plastic ring of the ventilator housing and modified to accept standard 1.25 inch (31.8 mm) pipe fittings (Figure 1). Distribution of the air to the three ventilator housings was achieved by constructing a manifold system to split the air stream from the blower and send portions to the direct-beam and global sensors. Preliminary results after analyzing data from the site since modification suggest reductions of diurnal thermal offsets, improved consistency between redundant measurements, and reduced effects on sensor operation because of transient thermal shocks from local rain-shower events.



Figure 1. The modified ventilator housings and air manifold components installed during December 2004 at the Kwajalein BSRN site.