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The performance of sonic anemometers under foggy conditions – An intercomparision above a Taiwanese mountainous cloud forest

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Foggy conditions are a toughness test for anemometers because the transceivers are continuously influenced by the deposition of fog-droplets. During a period of nearly four weeks three sonic anemometers where tested for their performance under foggy conditions. The anemometers were set up on a 24 meter high flux tower in a 14 meter high Chamaecyparis obtusa var. Formosana forest. The test anemometers were a Gill R3-50, a Young 81000V, and a Campbell CSAT3 (equipped with 'dripping noses'). All anemometers were set up at one level on the highest platform of the tower. The performance was evaluated on the basis of 10 Hz data. The test site is located in the northwest of Taiwan at about 1650 m above sea level. This location is influenced by a steady diurnal wind system of valley winds during daytime and mountain winds during nighttime. The valley winds transport air masses from the coast up to the mountain where they cool down and fog development occurs. Due to this effect the site is highly frequented with fog. Results of this intercomparison will be presented.