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Comparison of three sensible heat flux measurement techniques over homogeneous asphalt area in simulated rain.

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In this study, we analysed the impact of simulated precipitation events on sensible heat fluxes measured in June 2003 (ten-days experiment) and June 2004 (3-weeks experiment) over a 2500 m2 asphalt area located in Nantes (France). All components of the energy balance were also measured for modelling and validation purpose. This study compares three different techniques we used to estimate sensible heat flux (SHF): sonic anemometers, small aperture scintillomètres (SAS) and high frequency thermocouple (1Hz). The measurements show that the SAS provide robust 15 min average series. We show that methods proposed by deBruin (93) can improve the series especially for the thermocouples. Such measurements provide a good SHF estimation to calculate latent heat flux with an energy balance method. Results are compared with latent and sensible heat fluxes simulated by the SiSPAT land Surface model.