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A new look to land-atmosphere interactions with water vapour and temperature Raman lidar

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An intensive study of the surface-atmosphere interactions over and around a water body has been carried out during august 2008 in Seedorf (Switzerland). Measurements of absolute water vapour concentration and temperature variations obtained during this field campaign with the new EPFL scanning Raman lidar will be presented. The challenging design of the lidar allows us to work at high spatial (1.25m) and temporal (1s) resolutions, from 15 to 500 meters, with almost constant signal to noise ratio over the all range of interest. With such resolutions, we could observe small scales structures close to the surface, over the lake and the ground during daytime as well as multiple layering of a stable boundary layer during night time. The calibration procedure and inter-comparisons with commercial point-sensors will be shown as well. Opened questions will be addressed to the audience and different approaches to derive fluxes from lidar vertical scans or horizontal measurements will be discussed.