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## **Decomposing sensible fluxes from two urban zones using LAS scintillometry over the city of Nantes during the FLUXSAP 2012 measurement campaign**

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## DECOMPOSING SENSIBLE FLUXES FROM TWO URBAN ZONES USING LAS SCINTILLOMETRY OVER THE CITY OF NANTES DURING THE FLUXSAP 2012 MEASUREMENT CAMPAIGN.

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In the framework of a recent research program dealing with the sustainable development of cities (ANR 'Villes Durables', 'VegDUD'), two intensive field experiments (FluxSAP, <http://www.irstv.fr/> Mestayer [1]) were installed over the city of Nantes, in France. After an initial experiment in 2010, a second experiment in 2012 was set up to investigate different urban zones within Nantes. One an artificial surface (a parking lot), a typical 1960's urban housing zone and a modern 'eco-quarter' housing zone built in 2010/11. The experiment ran during the month of June 2012. As part of the set-up 4 Large Aperture Scintillometers (LAS) were installed over the city with distances ranging from 800m to 3km. The installation was set-up in such a way that there is one trajectory, which integrates roughly over all surfaces, with the others installed to decompose the long trajectory into smaller 'typical' surfaces.

Sensible heat flux along each path will be presented in conjunction with footprint estimates developed using the method from Meijninger [2] based on the dispersion model of Horst [3]. Interpretation of the results with regard to surface type will be discussed.

### References

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- [2] Meijninger, W.M.L., Hartogensis, O.K., Hoedjes, J.C.B., Zuurbier, R.M. and DeBruin, H.A.R. 2002, Determination of Area-Averaged Sensible Heat Fluxes with a Large Aperture Scintillometer over a Heterogeneous Surface, Bound. Layer Meteorol. 105, pp. 37-62
- [3] Horst, T.W. and Weil, J.C., 1992, Footprint Estimation for Scalar Flux Measurements in the atmospheric surface-layer, Bound. Layer Meteorol. 59, pp. 279-296.