

# Surface fluxes overview – O. Hartogensis

**Field Campaign surface fluxes, atmospheric profile overview**

**O. Hartogensis**

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- Surface flux measurements needed
  - for modelling and process studies
  - at scales varying from leaf to field to landscape to region
  - with partitioning according to the sources/sinks of H<sub>2</sub>O and CO<sub>2</sub>

**GOAL:** provide an overview of flux measurements according scale and partitioning

**NOTE:** EB available over the dominant vegetation types in wet/dry part of LIAISE domain



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## Scales



**Leaf/Plant**

**Scale**

$10^{-1}m$

**Flux technique**

Ecophysiology, lysimeters



**Field**

$10^2m$

Eddy Correlation, Flux Profile, laser scintillometer, lysimeters



**Landscape**

$10^3m$

Optical-Microwave scintillometer, Aircraft (ATR42-SAFIRE), LMD Lidars, composite EC



**Regional**

$10^2km$

Aircraft (ATR42-SAFIRE), composite EC

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## Partitioning

### H2O - EvapoTranspiration

	<b>Soil-E + Plant-T (ET)</b>	<b>Soil-E</b>	<b>Plant-T</b>
<b>Direct</b>	EC, lysimeters	mini-lysimeters (manual)	Ecophysiology, sap-flow
<b>Indirect</b>	flux-profile, scintillometers		SIF
		Isotopologue fluxes	

### CO2 – Respiration and Assimilation

	<b>Soil-R + Plant-R/A (NEE)</b>	<b>Soil-R</b>	<b>Plant-R</b>	<b>Plant-A</b>
<b>Direct</b>	EC	Chamber (manual)	Ecophysiology	
<b>Indirect</b>	flux-profile, scintillometers			SIF
		Isotopologue fluxes, EC-partitioning techniques		