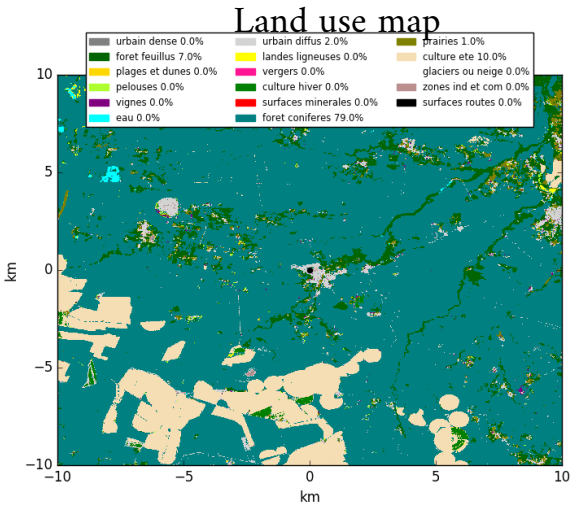
Surface-atmosphere interaction during a fog event

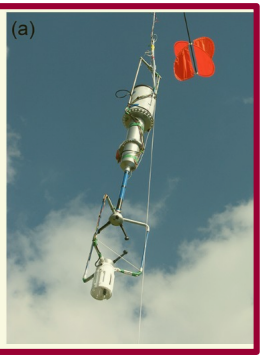
Guylaine Canut, CNRM/GMEI/4M

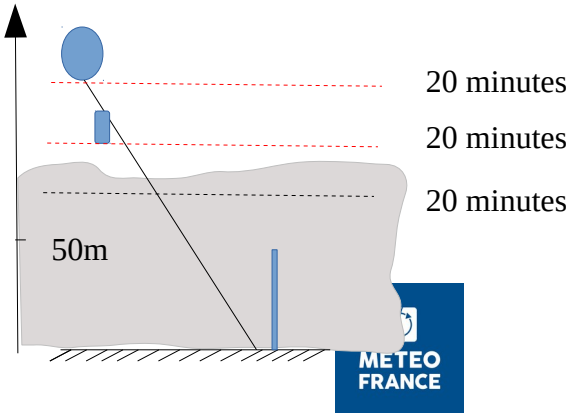
- **Questions :**
  - What is the rôle of the turbulence during the fog event ? What is :
    - The temporal evolution
    - The turbulence above the fog
    - The evolution of the anisotropy close the surface and above the fog?
  - How the turbulence and the microphysic interact ? To investigate the evolution of this interaction with simultaneaous observations.
  - Study the role of the surface heterogeneities of the life cycle of fog. What is the impact of a contrasted surface ?



- **Tools**
  - In situ Observations with multiscale appraoches
  - 50m tower with mean and turbulence measurement (Metek and Licor), turbulence probe (Gill) above tethered balloon (coupled with microphysic instrument)
  - Profil of TKE with wind doppler lidar (0-240 m), mainly before the event
  - Network of soil humidity and temperature (we will deploy 10 sites with 3 sensors at 10, 20 and 30 cm of depth)
  - LES :
    - Sensibility test (surface, initial conditions, collaboration with GMME group)

Sensible fluxes measured on a tethered balloon,
+ (first test with rapid humidity measurement)





- **Needs :**
  - **To discuss the flight strategy of the tethered balloon** (minimum 20 minutes of horizontal step to sample heat flux)
  - **To define a similar treatment for the turbulence data**
    - We have 2 solutions for the french system : eddypro or and home made treatment (similar with some difference). If we use eddy pro, we need the same configuration that the english flux tower

METEO FRANCE