

Active teaching and learning of the use of RPA in meteorology

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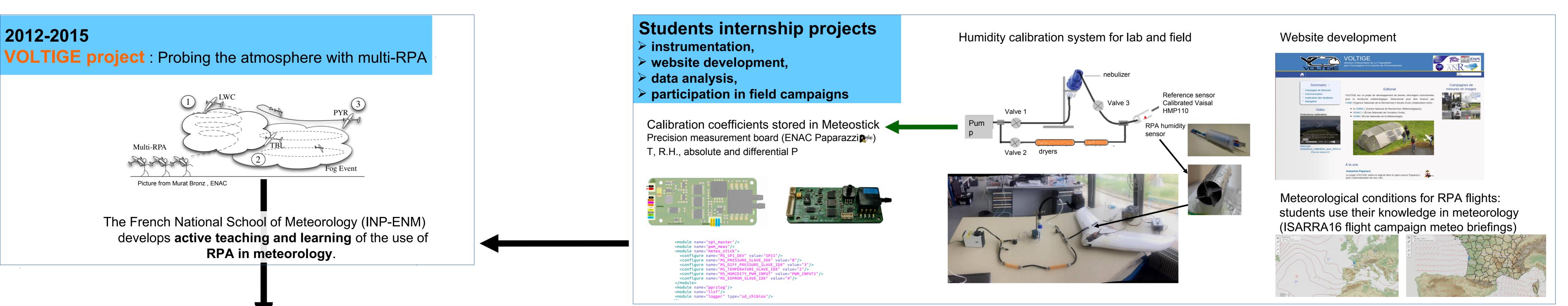
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Active teaching and learning of the use of RPA in meteorology

Grégoire Cayez (1,2), Gautier Hattenberger(3), Michel Gorraz(3), Alexandre Bustico(3) and Greg Roberts (2,4)



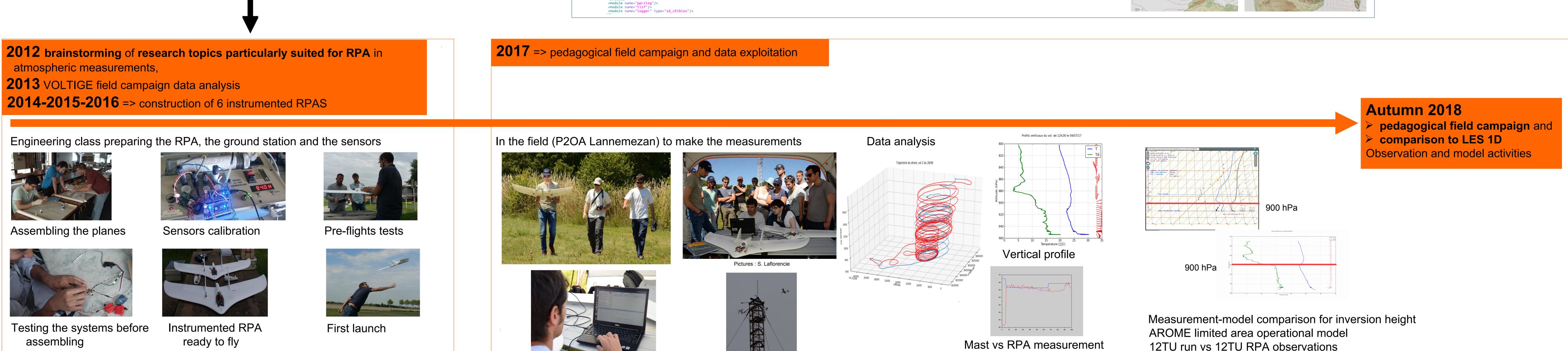


estimation. 1st

stage : 50m

(1) METEO FRANCE, ENM, Toulouse, France, (2) METEO FRANCE, CNRM, Toulouse, France, (3) École Nationale de l'Aviation Civile, Toulouse, France, (4) Scripps Institution of Oceanography, La Jolla, California, USA.

atmospheric measurements,



Testing the systems before assembling ready to fly Mast vs RPA measurement **Since 2015** Using the systems assembled and tested with students for field campaigns 2017 2015 2016 CERDANYA: STABLE BOUNDARY LAYER **BACC+: STABLE BOUNDARY LAYER BURE: FOG CAMPAIGN** Flights up to 1000 m AGL (every 20 min) Long term measurements in Landes for ➤ Single operator + car boundary layer and fog studies => step Boundary layer evolution toward operational activities ➤ 2 to 3 soundings per hour Boundary layer evolution > T and RH measurement, wind estimation during spirals ascents > Around 100 flights by the end of 2017 Radio sounding comparison within 0.5°C and 6% RH ievening orning ➤ Single operator + car 29/10/2016 15h30 Campagne BACL+ Vol xeno_3 x3163431 du 08/12/2016 de 06h58m01 a 07h08m39 UTC %:hum_rel_desc_4, hum_rel_desc_60 50 90 Circular flights for

Temperature T°C R.H. %

Engagement of students

Benefits for the research lab:

- add educational component
- outreach via university newsletters
- ➢ link research and operational meteorology
- unlock creativity, add interesting new vision and motivation to the projects.

Benefits for the university:

20 30 40 50 Hamidita

Humidity

Temperature

develops active learning experience creates motivation and encourage team building