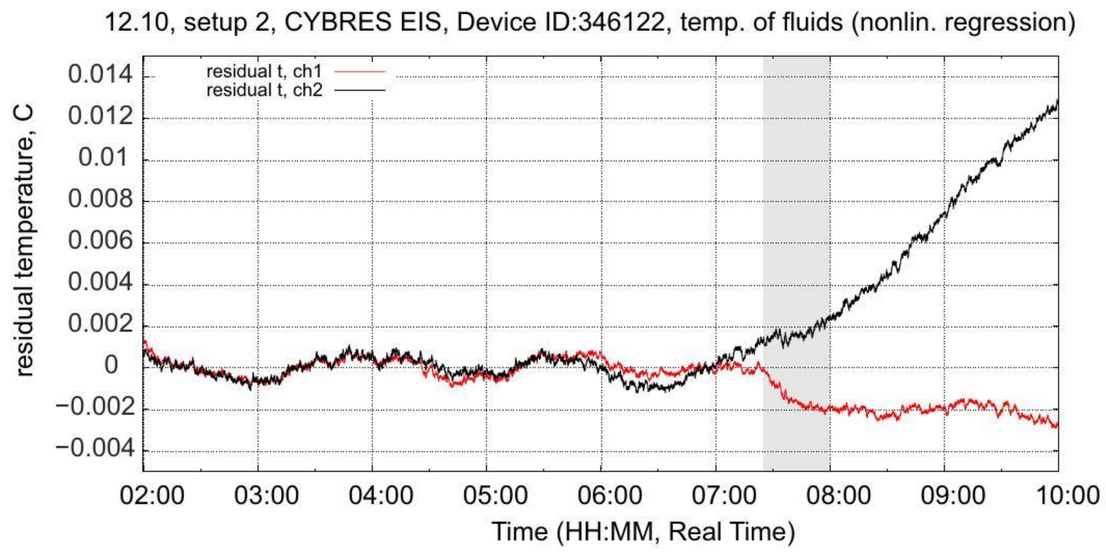
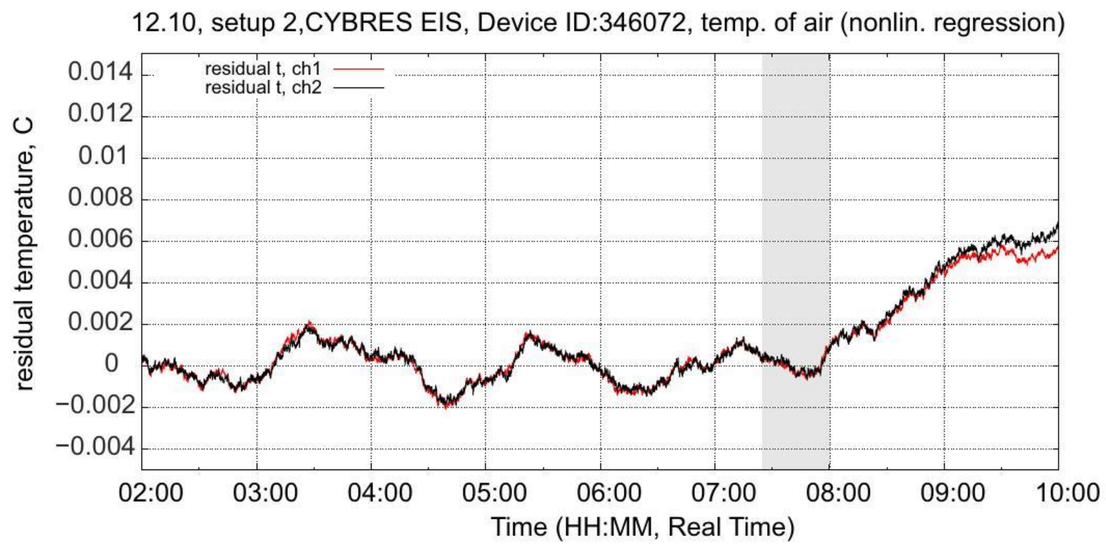


(a)

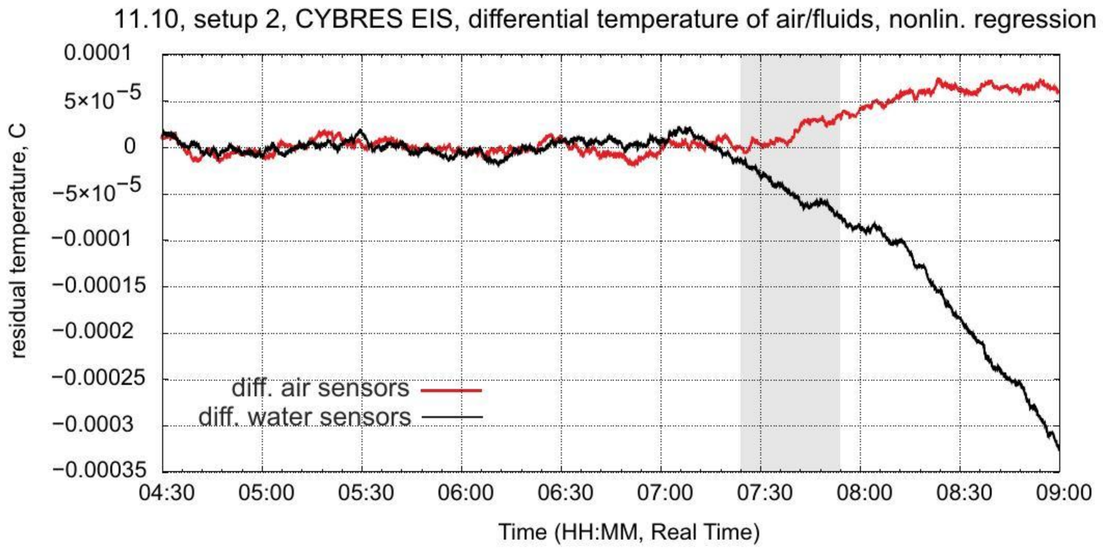


(b)

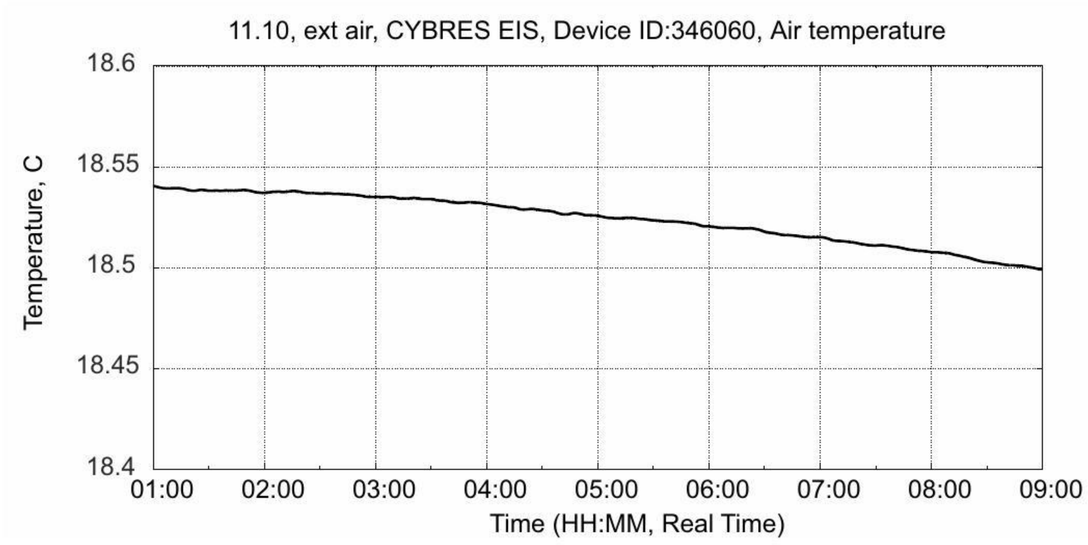
Figure 8. Example of experiments in the phase 2: **(a)** symmetry breaking of temperature in fluid sensors; **(b)** air sensors demonstrate a similar temperature of both channels. Grey bar shows an experimental session. These two graphs can be represented as differential temperatures in one plot, see Fig. 10(g).

for all sensors. It is clearly evident that external and system-internal factors do not provide any reasons for a change of temperature trend inside the calorimeter (especially for only one channel of the calorimeter). Experimental sessions take 20-30 minutes, temperature changes extend far beyond the sessions, typically 60-90 minutes after, until the differential temperature again balances in the calorimeters. To exclude computational artifacts caused by nonlinear regression, Figs. 10(h) and 10(i) demonstrate the same experiment in linear (without a priory knowledge about the session time) and nonlinear regression (with a priory knowledge about the session time): typically nonlinear approximation provides better fitting of background region and more clear separation of different trends, however it should not be used for long post-experimental regions due to accumulation of errors.

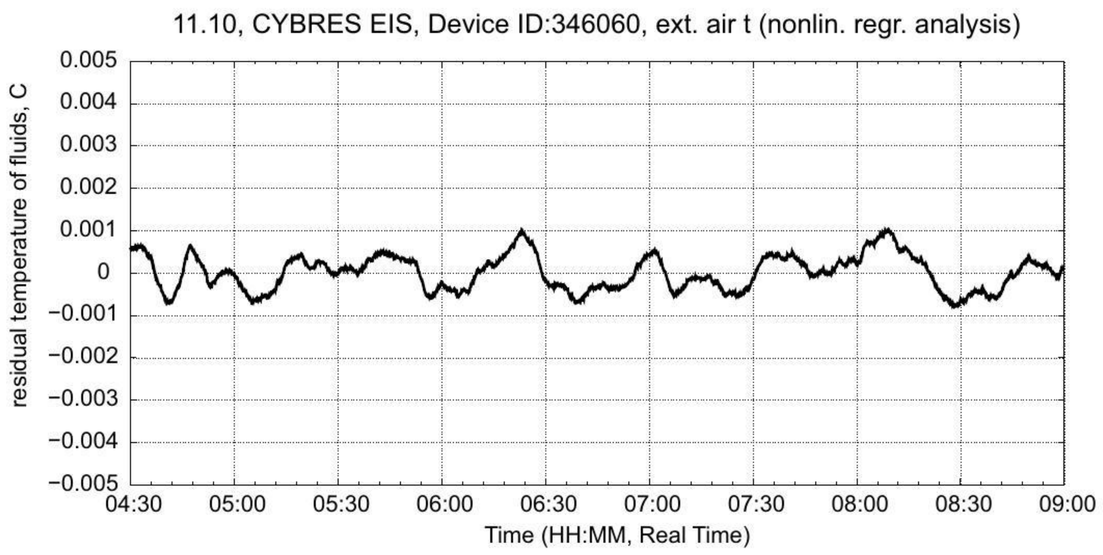
Several examples of experimental data from the phase 2 are shown in Fig. 10. Since experiments involved several calorimeters working in parallel (served also as control devices), mediators attempted to affect several of them during one session. We noticed two atypical behaviors of calorimeters installed in the same measurement room. First, if at the beginning of experiments only one targeted sensor/channel responded, as shown in Fig. 8(a), towards the end of all experiments several fluidic sensors may have responded (however, still with a difference between targeted and not targeted channels). Second, as the experiments progressed, the water used in calorimeters exhibited increasing thermal fluctuations and therefore required



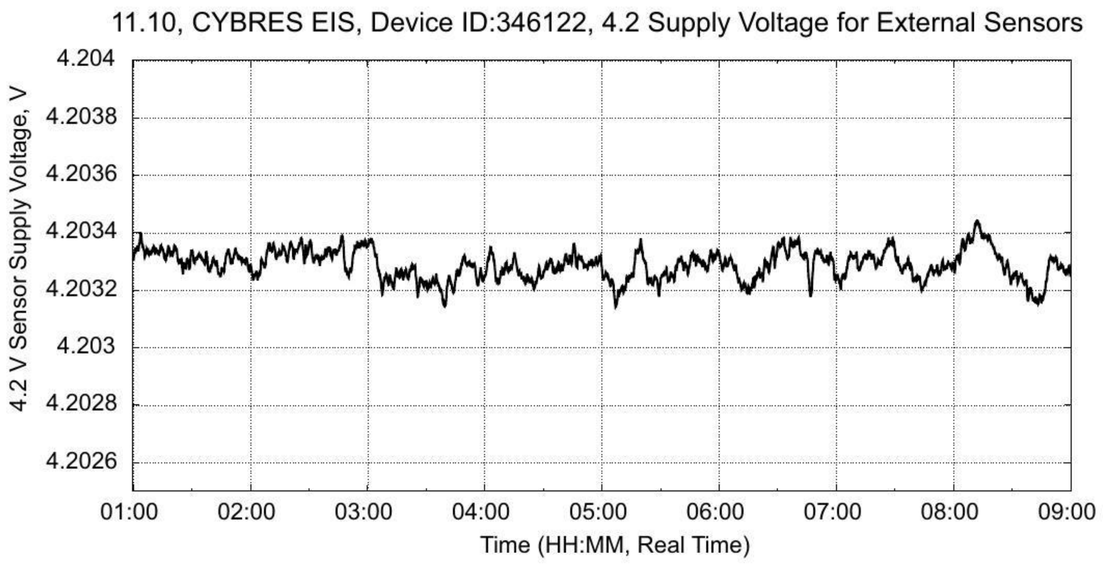
(a)



(b)



(c)



(d)

Figure 9. Example of experiments in the phase 2: **(a)** differential temperature of fluidic and air sensors; **(b)** temperature dynamics in measurement laboratory; **(c)** convection-based fluctuations of temperature in measurement laboratory (regression analysis) measured by external air sensors; **(d)** dynamics of power supply for fluidic and air sensors. Grey bar shows an experimental session. Other examples of fluidic and environmental data are shown in Figs.10(d)-10(f).