

H-DisNet: Intelligent Hybrid Thermo-Chemical District Networks Demonstrator at green house in Wangen (Switzerland)

Control of air humidity and temperature

ZHAW plans a demonstrator as “demand node” at the greenhouse in Wangen.

The air humidity and temperature will be controlled through an open absorption process with a significant saving in the energy consumption:

- Reduction of the ventilation losses: ventilation is not required anymore to control the air humidity (figure 1)
- Humidification and cooling without necessity of air undercooling to remove the excess humidity as in standard processes (figure 2)

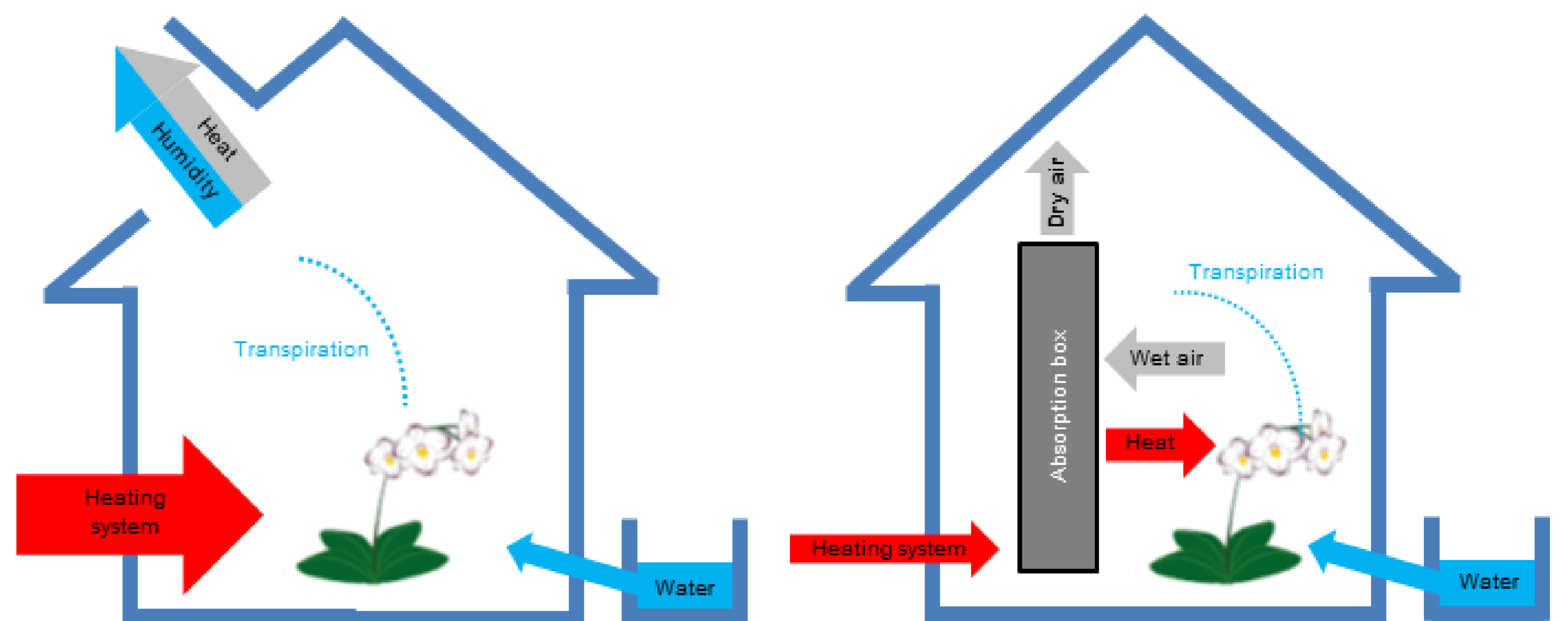


Figure 1: reduction of ventilation losses

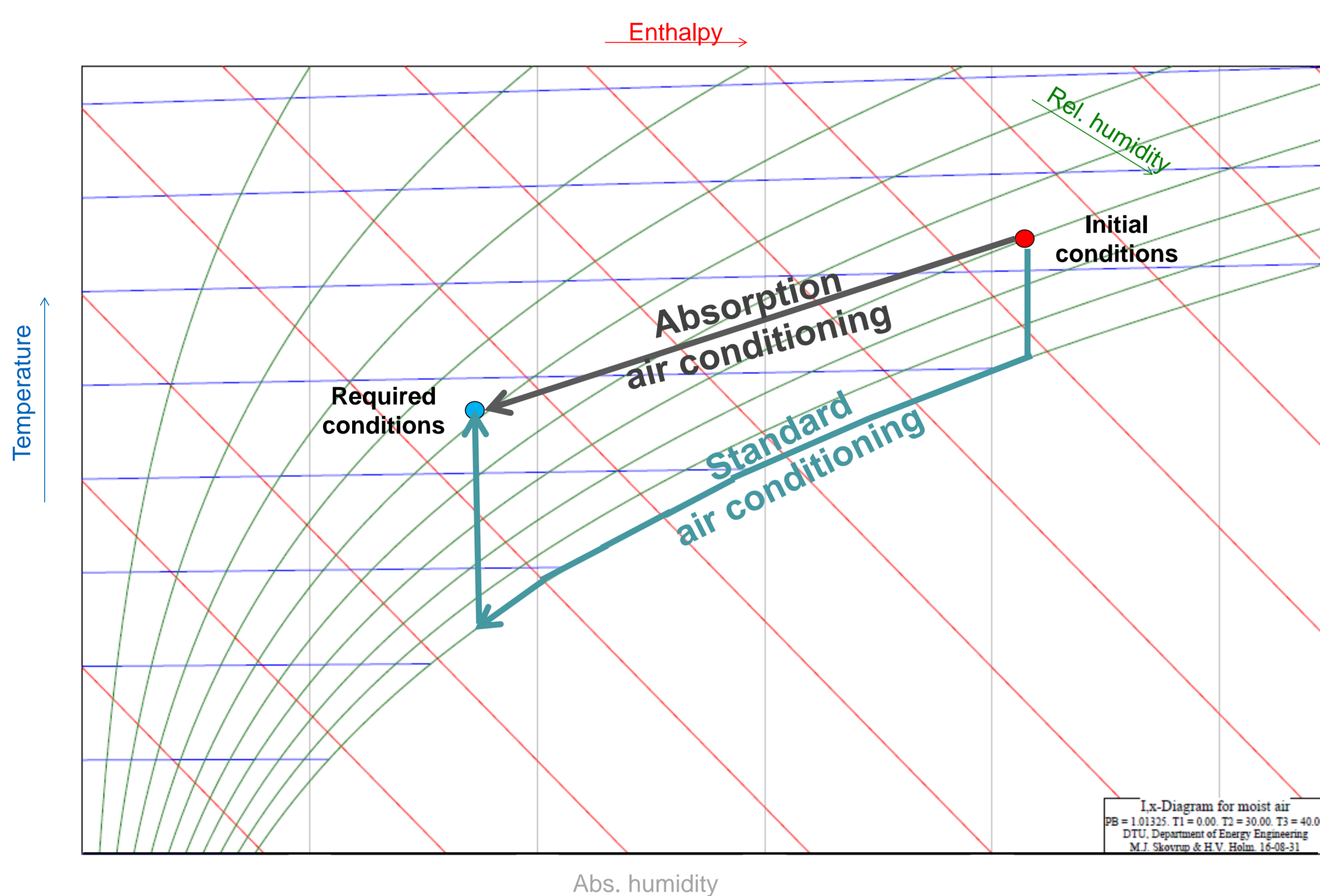


Figure 2: comparison of absorption and standard air conditioning in hx diagram

Three different configurations for the absorption process will be tested in Wangen (figure 3):

- Absorption box of Watergy
- Absorption box with packing materials
- Absorption in a open system

Simultaneously to the tests, data from a green house sector without absorption systems and with the same boundary conditions are collected as reference for an assessment of the proposed processes.



Figure 3: absorption concepts tested in Wangen: absorption box of Watergy, absorption box with packing materials, open system without ventilation