

Block Parameters: House\_simple\_Ideal

11  
Amplitude of monthly mean outside temperature over the year [K]  
9.3  
Time shift where outside temperature sine-curve shows a minimum [s]  
319\*3600

Picking a parameter set  
Carnot public data   Carnot internal data   Selected path

Path  
(path\_cannot('lfsf'), 'Load', 'Houses', 'House\_simple', 'parameter\_set')

Parameter set  
'SimpleHouse\_Room40m2.mat'

Edit path and name of parameter set

User defined parameters

House   Ground   Windows   HVAC

Ventilation rate in 1/h  
0.4

Heat recovery (0..1)  
0

Qdot\_nom: nominal power in W  
1792

Tdiff\_nom: nominal temperature difference in K  
15

Radiator exponent (> 0)  
1.1

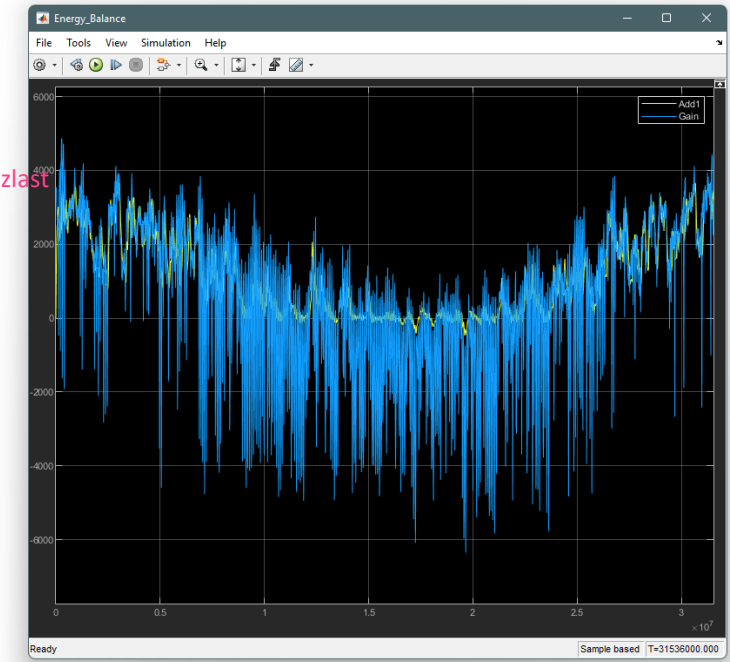
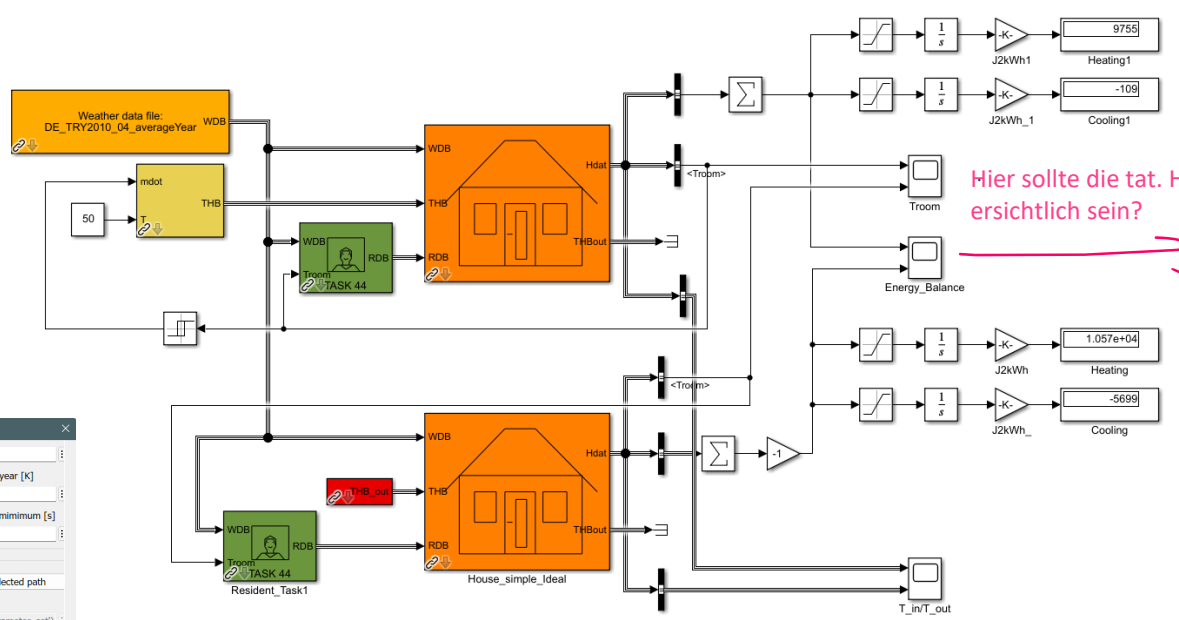
mass \* capacity in J/K  
40000000

l: linear pressure drop Pa/(kg/s)  
10

q: quadratic pressure drop Pa/(kg/s)<sup>2</sup>  
100

Save in Carnot internal data   Save in selected path

OK   Cancel   Help   Apply



Obige Heizlast ist jedoch um ca. Faktor 2 höher

### Appendix C: Heat load estimation

The heat load at design ambient temperature is calculated as an extrapolation of a linear fit to the daily heating power consumption.

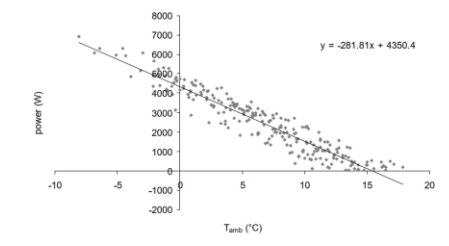


Figure 15: Daily heating power consumption as a function of ambient temperature for SFH100 at Strasbourg, with linear fit (black curve).

Table 9: Building dependent heating system parameters: design heat load, in- and outlet temperatures, and heating season limit.

| building | $\dot{Q}_{loc,ST}$<br>(W) | $\dot{Q}_{loc,AT}$<br>(W) | $\dot{Q}_{loc,HE}$<br>(W) | $\vartheta_{d,in,ST}$<br>(°C) | $\vartheta_{d,out,ST}$<br>(°C) | $\vartheta_{d,in,AT}$<br>(°C) | $\vartheta_{d,out,AT}$<br>(°C) | $\vartheta_{d,in,HE}$<br>(°C) | $\vartheta_{d,out,HE}$<br>(°C) | $\vartheta_{HS}$<br>(°C) |
|----------|---------------------------|---------------------------|---------------------------|-------------------------------|--------------------------------|-------------------------------|--------------------------------|-------------------------------|--------------------------------|--------------------------|
| SFH15    | <u>1'792</u>              | 0                         | 3'097                     | 35                            | 30                             | 35                            | 30                             | 35                            | 30                             | 12                       |
| SFH45    | 4'072                     | 1'310                     | 6'315                     | 35                            | 30                             | 35                            | 30                             | 40                            | 35                             | 14                       |
| SFH100   | 7'337                     | 3'382                     | 10'931                    | 55                            | 45                             | 55                            | 45                             | 60                            | 50                             | 15                       |

Auszug aus dem T44A38