

Some basic examples to show the use of the new Block-Oriented model library in the EMSO simulator

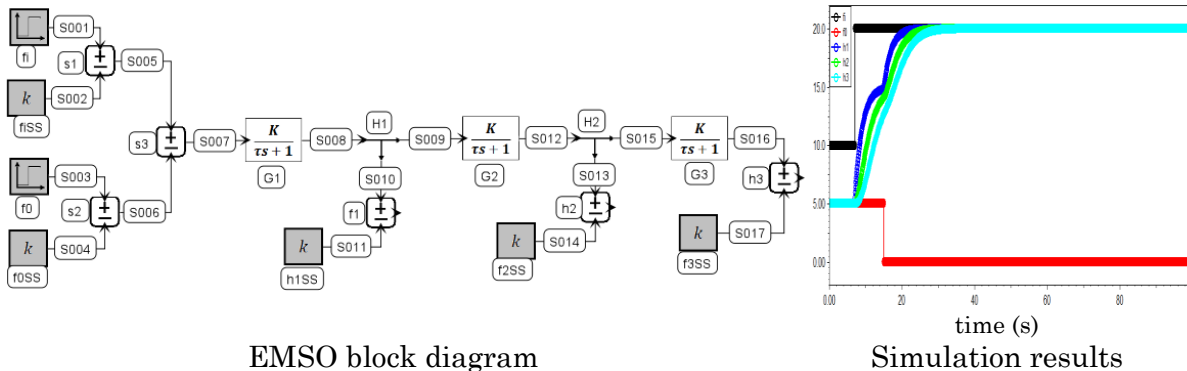
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EXAMPLE 1: Simulation of a continuous series of noninteracting tanks

Description: EMSO implementation of the noninteracting level process in subsection 4-1.1 of Corripio's book.

File: *stanks.pfd*

The simulation results shown below are with: $f_1 = 10$, $f_0 = 5$, and $K_j = 1$ and $\tau_j = 2$ for all the tanks.

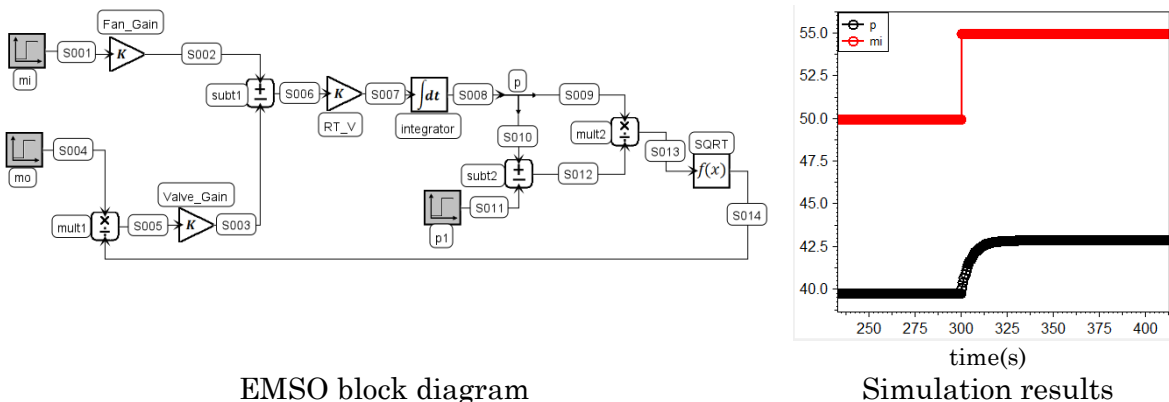


EXAMPLE 2: Simulation of gas process

Description: EMSO implementation of the example 13-3.1 in Corripio's book

File: *gasprss.pfd*

The simulation results shown below are using with the default parameters given in the book.

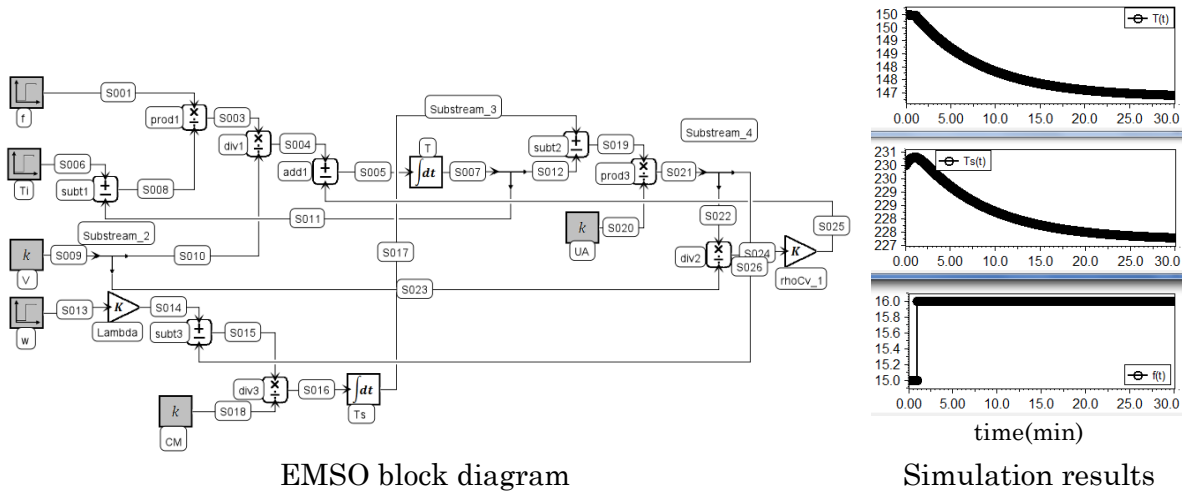


EXAMPLE 3: Simulation of Stirred-Tank Heater

Description: EMSO implementation of the example 13-3.2 in Corripio's book

File: *CSTHtr.pfd*

The simulation results shown below are using with the default parameters given in the book.

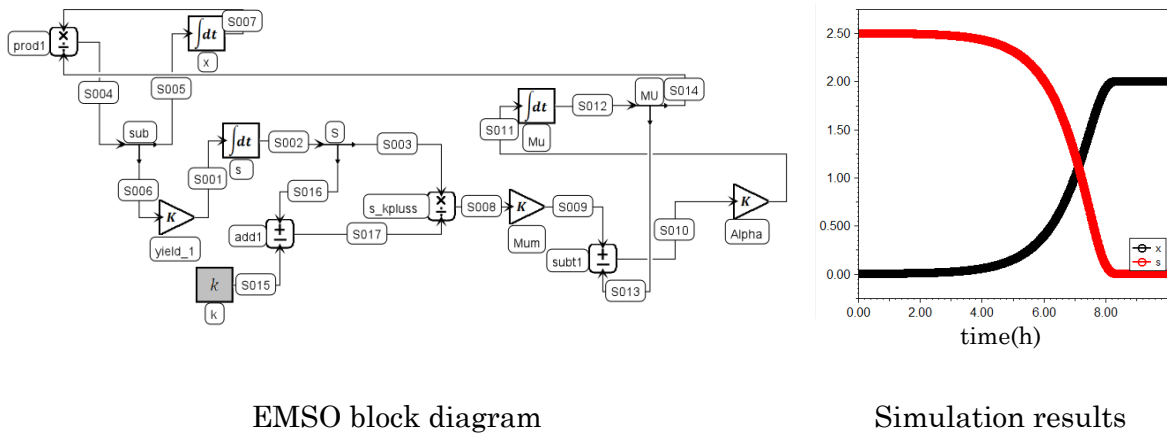


EXAMPLE 4: Simulation of a Batch Bioreactor

Description: EMSO implementation of the example 13-3.3 in Corripio's book

File: *Adaptab.pfd*

The simulation results shown below are using with the default parameters given in the book.

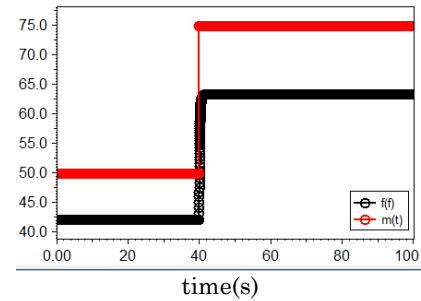
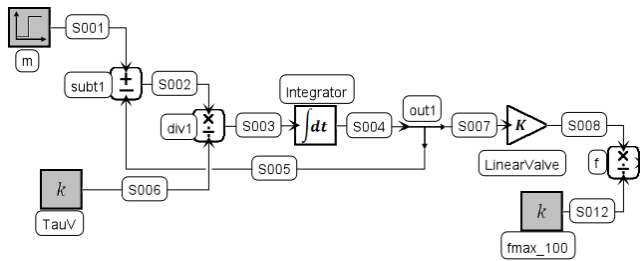


EXAMPLE 5: Simulation of a Linear Air-to-Open control valve

Description: EMSO simulation of the linear Air-to-Open control valve with constant pressure drop mentioned in subsection 13-4.1 in Corripio's book

File: *linearAOcvalve.pfd*

The simulation results shown below are using with the default parameters given in the book.



EMSO block diagram

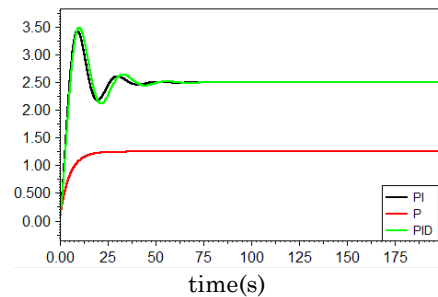
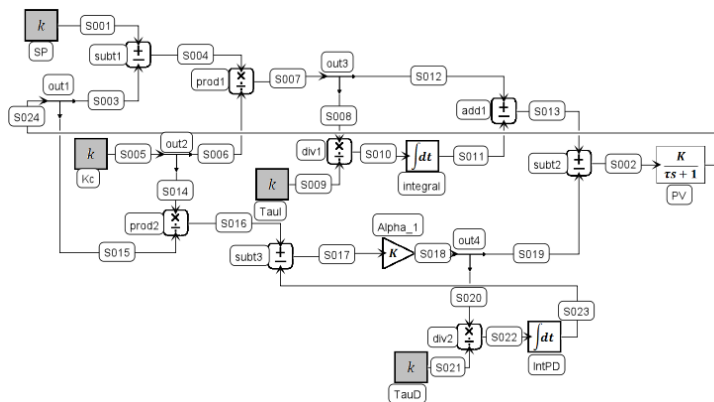
Simulation results

EXAMPLE 6: Simulation of a parallel PID controller

Description: EMSO simulation of a parallel PID as stated in subsection 13-4.2 of Corripio's book. The PV block added represents a simple dynamics to be controlled.

File: *parallelPID.pfd*

The simulation results shown below are using with the default parameters given in the book.



EMSO block diagram

Simulation results

REFERENCES

Smith, C., & Corripio, R. (2006). *Principles and practice of automatic process control* (Third Edit.). United States of America: John Wiley & Sons.