# Equations for the two Storages and the two Flows Example 2

Flow 1: F1(t) = parm1, with parm 1 = 10

Flow 2: F2(t) = parm2\*A(t), with parm2 = 0.1

A(t) = A(t-dt) + (F1(t-dt) – F2(t-dt))\*dt (dt=1)

B(t) = A(t-dt) + F2(t-dt) \* dt (dt = 1)

# The Hand Integration Table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time | Storages |  | The Rest (arms, rates, … ) | | |  |
|  | A(t)= | B(t)= |  | F1(t) |  | F2(t) |
|  | A | B | parm1 | parm1 | parm2 | parm2\*A |
| 0 | 0 | 0 |  |  |  |  |
| 0 |  |  | 10 | 10 | 0.1 | 0 |
| 1 | 10 | 0 |  |  |  |  |
| 1 |  |  | 10 | 10 | 0.1 | 1 |
| 2 | 19 | 1 |  |  |  |  |
| 2 |  |  | 10 | 10 | 0.1 | 1.9 |
| 3 | 27.1 | 2.9 |  |  |  |  |
| 3 |  |  | 10 | 10 | 0.1 | 2.7 |
| 4 | 34.39 | 5.61 |  |  |  |  |
| 4 |  |  | 10 | 10 | 0.1 | 3.439 |
| 5 | 40.951 | 9.049 |  |  |  |  |
| 5 |  |  | 10 | 10 | 0.1 | 4.0951 |

# Example 3

Flow 1: F1(t) = parm1, with parm1 = 10

Flow 2: F2(t) = parm2\*(A(t)-B(t)), parm2 = 0.1

A(t) = A(t-dt) + (F1(t-dt) – F2(t-dt)) \* dt (dt=1)

B(t) = B(t-dt) + F2(t-dt) \* dt (dt = 1)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time | Storages |  | The Rest (arms, rates, … ) | | |  |
|  | A(t)= | B(t)= |  | F1(t) |  | F2(t) |
|  | A | B | parm1 | parm1 | parm2 | parm2\*A-B |
| 0 | 0 | 0 |  |  |  |  |
| 0 |  |  | 10 | 10 | 0.1 | 0 |
| 1 | 10 | 0 |  |  |  |  |
| 1 |  |  | 10 | 10 | 0.1 | 1 |
| 2 | 19 | 1 |  |  |  |  |
| 2 |  |  | 10 | 10 | 0.1 | 1.8 |
| 3 | 27.2 | 2.8 |  |  |  |  |
| 3 |  |  | 10 | 10 | 0.1 | 2.44 |
| 4 | 34.76 | 5.24 |  |  |  |  |
| 4 |  |  | 10 | 10 | 0.1 | 2.952 |
| 5 | 41.808 | 8.192 |  |  |  |  |
| 5 |  |  | 10 | 10 | 0.1 | 3.3616 |