

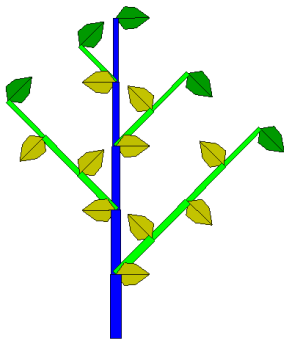
The deterministic part of GreenLab model

The case of free growth

Plant growth depends on leaves surface that intercepts light. At the beginning of growth all leaves surface intercepts light (leaves do not overlap). Interception surface is then equal to the total surface set up and production is proportional to leave surface; the growth is named free. According to leaves growth, they overlap and only a part of leaves surface intercepts light. The growth is then dependent of the square meter surface covered by the plant. A surplus of leave is then useless for production.

In the case of deterministic model (opposed to stochastic model, non-described in this tutorial) all organs are set up at each time step. A time step corresponds to a (growth) development cycle. Here, we consider the case where leaves and fruits function only during one cycle and then die.

1. Phytomer set up



At each cycle, each apical bud forms a new phytomer. In the present example one bud forms an internode and a leaf.

Figure 3. Simulating Roux 's model

Phytomers of physiological age 1 are colored in blue, while phytomers of physiological age 2 are colored in green.

Leaves functioning at cycle n are colored in dark green while those set up before the cycle n are colored in light green.

2. Mixte buds: reiterations set up

Total reiteration may occur on trunk phytomers

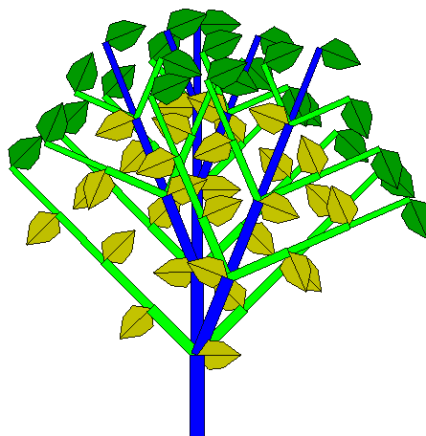


Figure 4. Simulation with reiterations