

A

Point (P_0) x_0 y_0 z_0

Random angles

Function

Elongation Length

Length function

Length variability

Strigolactones' effect

Direction

Point (P_1) x_1 y_1 z_1

Random angles

B

Lateral root branching

 P_0 P_1 Br_1 $L_{1,1}$ $L_{1,2}$ $L_{1,3}$ STOP Br_2 $L_{2,1}$ $L_{2,2}$... $L_{2,s}$ STOP P_2 Br_3 No lateral root branch Br_4 $L_{4,1}$ $L_{4,2}$... $L_{4,s}$ $L_{4,s+1}$ GROW P_3 Br_5 $L_{5,1}$ $L_{5,2}$... $L_{5,s}$ $L_{5,s+1}$ GROW

...

 P_4 Br_{m-1} No lateral root branch Br_m $L_{m,1}$ $L_{m,2}$ $L_{m,3}$ STOP

Branching points
 OR
 STOP
 OR
 GROW

 P_{n-1} P_n Root Strand (P)

C

Root axes branching

Primary Root

Primary 1

Lateral 1

Seminal Roots

Seminal 1

Lateral 1

Seminal 1

Lateral 1

Crown Roots

Crown p

Lateral p

Crown p-1

Lateral p-1

...

Crown 2

Lateral 2

Crown 1

Lateral 1

Crown 1

Brace Roots

Brace q

Lateral q

Brace q-1

Lateral q-1

...

Brace 2

Lateral 2

Brace 1

Lateral 1

D

Primary Root

Seminal Roots

Crown Roots

Brace Roots

Line Graphics3D

