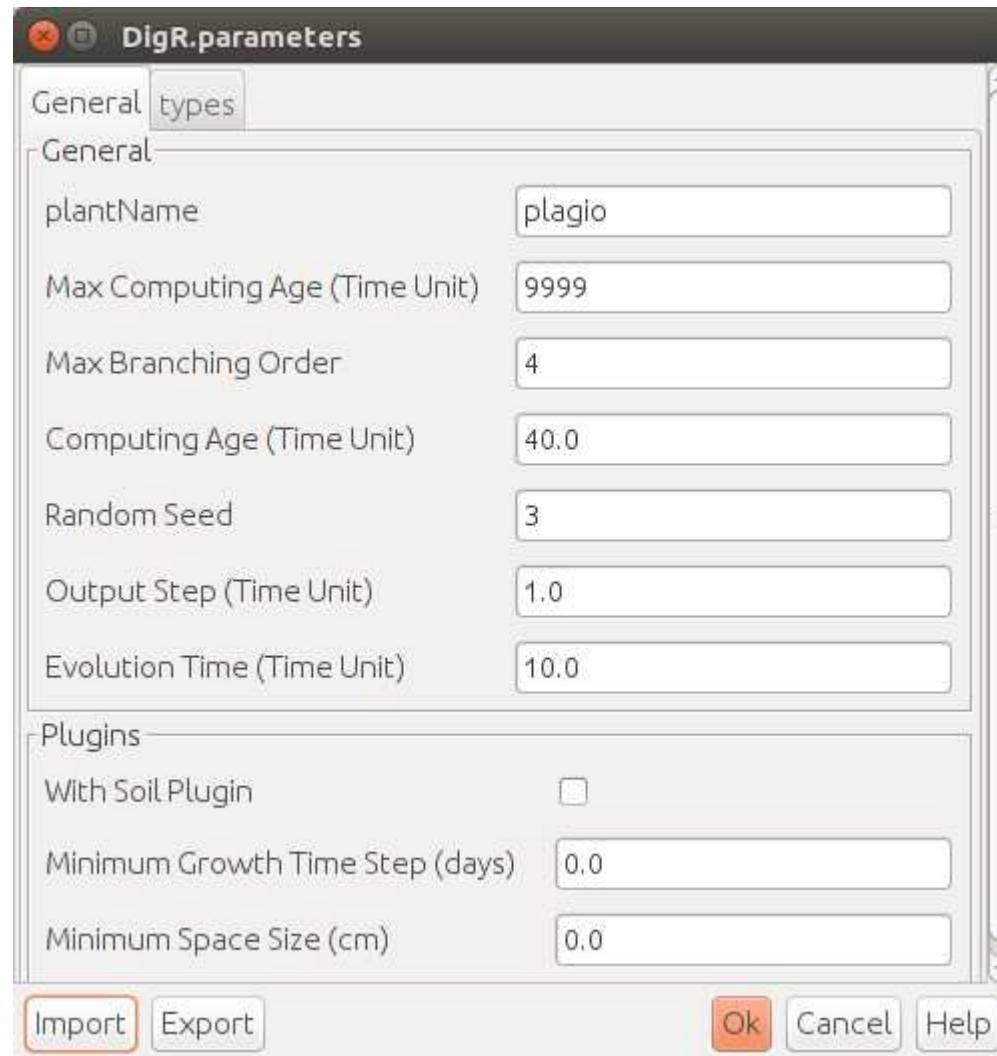


For those who want more

Parametrisation of a system with secondary taproot



Type 1

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
topology					
Potential Number Of Roots	<input type="text" value="1"/>				
Probability For Each Root	<input type="text" value="0.0 : 1.0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="↑"/>	<input type="button" value="↓"/>
Delay Before Growth (Time Unit)	<input type="text" value="0.0 : 0.0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="↑"/>	<input type="button" value="↓"/>
Growth Speed (cm/Time Unit)	<input type="text" value="0.0 : 1.0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="↑"/>	<input type="button" value="↓"/>
Percent Variation On Growth Speed (%)	<input type="text" value="0.0"/>				
Death Probability	<input type="text" value="0.0 : 0.0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="↑"/>	<input type="button" value="↓"/>
Lag Before Pruning (Time Unit)	<input type="text" value="999.0"/>				
Standard Deviation On Pruning Lag (Time Unit)	<input type="text" value="0.0"/>				
Percent Not Pruned (%)	<input type="text" value="0.0"/>				
diameter					
Initial Diameter (cm)	<input type="text" value="0.1"/>				
Standard Deviation On Initial Diameter (cm)	<input type="text" value="0.0"/>				
Diameter Increase Ratio	<input type="text" value="0.0 : 15.0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="↑"/>	<input type="button" value="↓"/>
Diameter Increase Time (time Unit)	<input type="text" value="0.0 : 40.0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="↑"/>	<input type="button" value="↓"/>
Delay Before Diameter Increase (time Unit)	<input type="text" value="0.0 : 0.0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="↑"/>	<input type="button" value="↓"/>
Standard Deviation On Diameter Increase Ratio	<input type="text" value="0.0"/>				
Standard Deviation On Diameter Increase Time (time Unit)	<input type="text" value="0.0"/>				
Standard Deviation On Delay Before Diameter Increase (time Unit)	<input type="text" value="0.0"/>				
reiteration					
MaxReit	<input type="text" value="1"/>				
ReitAngle	<input type="text" value="30.0"/>				
ReitRhizotaxy	<input type="text" value="180.0"/>				
reitDistance	<input type="text" value="0.0 : 20.0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="↑"/>	<input type="button" value="↓"/>
reitFrequency	<input type="text" value="0.0 : 100.0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="↑"/>	<input type="button" value="↓"/>

RamificationSet

name	<input type="text" value="Default_set"/>
Type (index) Frequency (%)	<input type="text" value="1 : 100.0"/> <input type="button" value="+"/> <input type="button" value="-"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
Standard Deviation (%)	<input type="text" value="0.0"/> <input type="button" value="+"/> <input type="button" value="-"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
Inter Branching Distance (cm)	<input type="text" value="5.0 : 100.0"/> <input type="button" value="+"/> <input type="button" value="-"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
Standard Deviation (cm)	<input type="text" value="0.0"/> <input type="button" value="+"/> <input type="button" value="-"/> <input type="button" value="↑"/> <input type="button" value="↓"/>

RamificationSet

name	<input type="text" value="Default_set"/>
Type (index) Frequency (%)	<input type="text" value="3 : 100.0"/> <input type="button" value="+"/> <input type="button" value="-"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
Standard Deviation (%)	<input type="text" value="0.0"/> <input type="button" value="+"/> <input type="button" value="-"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
Inter Branching Distance (cm)	<input type="text" value="0.0 : 3.0"/> <input type="button" value="+"/> <input type="button" value="-"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
Standard Deviation (cm)	<input type="text" value="2.0"/> <input type="button" value="+"/> <input type="button" value="-"/> <input type="button" value="↑"/> <input type="button" value="↓"/>

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4

Type 2

1_general		2_topology		3_branching		4_angles		5_diameter		6_reiteration	
topology											
Potential Number Of Roots	<input type="text" value="1"/>										
Probability For Each Root	<input type="text" value="0.0 : 1.0"/>	<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>			
Delay Before Growth (Time Unit)	<input type="text" value="0.0 : 10.0"/>	<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>			
Growth Speed (cm/Time Unit)	<input type="text" value="0.0 : 1.0"/>	<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>			
Percent Variation On Growth Speed (%)	<input type="text" value="0.0"/>	<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>			
Death Probability	<input type="text" value="0.0 : 0.0"/>	<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>			
Lag Before Pruning (Time Unit)	<input type="text" value="999.0"/>	<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>			
Standard Deviation On Pruning Lag (Time Unit)	<input type="text" value="0.0"/>	<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>			
Percent Not Pruned (%)	<input type="text" value="0.0"/>	<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>			
RamificationSet											
name		<input type="text" value="Default_set"/>		Type (index) Frequency (%)		<input type="text" value="2 : 100.0"/>		Standard Deviation (%)		<input type="text" value="0.0"/>	
<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>		<input type="button" value="+"/>		<input type="button" value="-"/>	
Inter Branching Distance (cm)		<input type="text" value="5.0 : 20.0"/>		Standard Deviation (cm)		<input type="text" value="3.0"/>		Inter Branching Distance (cm)		<input type="text" value="0.0"/>	
<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>		<input type="button" value="+"/>		<input type="button" value="-"/>	
Reiteration											
MaxReit		<input type="text" value="1"/>		ReitAngle		<input type="text" value="30.0"/>		Reithrizotaxy		<input type="text" value="90.0"/>	
<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>		<input type="button" value="+"/>		<input type="button" value="-"/>	
reitDistance		<input type="text" value="0.0 : 15.0"/>		reitFrequency		<input type="text" value="0.0 : 30.0"/>		<input type="button" value="+"/>		<input type="button" value="-"/>	
<input type="button" value="+"/>		<input type="button" value="-"/>		<input type="button" value="↑"/>		<input type="button" value="↓"/>		<input type="button" value="+"/>		<input type="button" value="-"/>	
d.fr											
<input type="button" value="Ok"/> <input type="button" value="Cancel"/>											

Type 3

type	
1_general	2_topology
3_branching	4_angles
5_diameter	6_reiteration
topology	
Potential Number Of Roots	1
Probability For Each Root	0.0 : 1.0
Delay Before Growth (Time Unit)	0.0 : 3.0
Growth Speed (cm/Time Unit)	0.0 : 0.8
Percent Variation On Growth Speed (%)	30.0
Death Probability	0.0 : 0.0
Lag Before Pruning (Time Unit)	999.0
Standard Deviation On Pruning Lag (Time Unit)	0.0
Percent Not Pruned (%)	0.0

type	
1_general	2_topology
3_branching	4_angles
5_diameter	6_reiteration
Branching	
Default_set: InterRamiDistance (0.0 : 1.0,) typeFrequency	
RamificationSet	
name	Default_set
Type (index) Frequency (%)	0.0 : 0.0
Standard Deviation (%)	0.0
Inter Branching Distance (cm)	0.0 : 1.0
Standard Deviation (cm)	0.0

type	
1_general	2_topology
3_branching	4_angles
5_diameter	6_reiteration
diameter	
Initial Diameter (cm)	0.1
Standard Deviation On Initial Diameter (cm)	0.02
Diameter Increase Ratio	0.0 : 15.0 5.0 : 5.0
Diameter Increase Time (time Unit)	0.0 : 30.0
Delay Before Diameter Increase (time Unit)	0.0 : 0.0
Standard Deviation On Diameter Increase Ratio	1.0
Standard Deviation On Diameter Increase Time (time Unit)	10.0
Standard Deviation On Delay Before Diameter Increase (time Unit)	0.0

type	
1_general	2_topology
3_branching	4_angles
5_diameter	6_reiteration
reiteration	
MaxReit	1
ReitAngle	30.0
ReitRhizotaxy	137.0
reitDistance	0.0 : 10.0
reitFrequency	0.0 : 10.0

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Type 4

1_general		2_topology		3_branching		4_angles		5_diameter		6_reiteration	
topology											
Potential Number Of Roots	1										
Probability For Each Root	0.0 : 1.0	+ - ↑ ↓									
Delay Before Growth (Time Unit)	0.0 : 5.0	+ - ↑ ↓									
Growth Speed (cm/Time Unit)	0.0 : 0.4	+ - ↑ ↓									
Percent Variation On Growth Speed (%)	0.0										
Death Probability	0.0 : 0.0	+ - ↑ ↓									
Lag Before Pruning (Time Unit)	999.0										
Standard Deviation On Pruning Lag (Time Unit)	0.0										
Percent Not Pruned (%)	0.0										

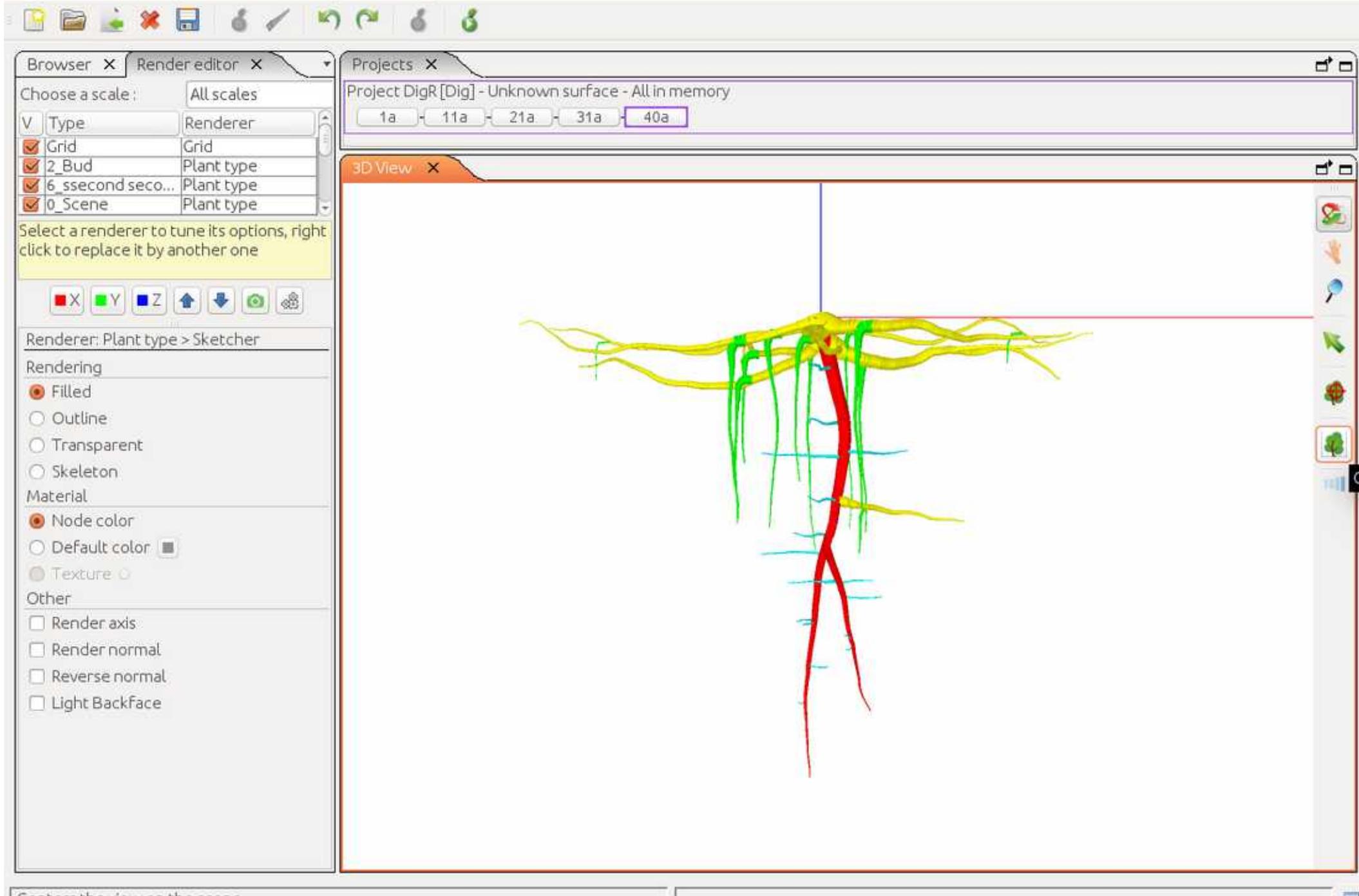
1_general		2_topology		3_branching		4_angles		5_diameter		6_reiteration	
branching											
ramificationSets		+ - ↑ ↓									

1_general		2_topology		3_branching		4_angles		5_diameter		6_reiteration	
angles											
insertionType	RHIZOTAXY										
Insertion Angle (degree)	90.0										
Standard Deviation On Insertion Angle (degree)	0.0										
Rhizotaxy Spiral Angle (degree)	0.0 : 137.0	+ - ↑ ↓									
Standard Deviation On Rhizotaxy (degree)	0.0										
Tortuosity Angle (degree)	4.0										
Standard Deviation On Tortuosity Angle (degree)	0.0										
Vertical Constraining Cone Opening Angle (degree)	2.0										
Horizontal Constraining Cone Opening Angle (degree)	45.0										
Constraining Cone Length (cm)	10.0										
Direction To Vertical (degree)	0.0 : 90.0	+ - ↑ ↓									
Length To Reach Direction (cm)	0.0 : 1.0	+ - ↑ ↓									

1_general		2_topology		3_branching		4_angles		5_diameter		6_reiteration	
diameter											
Initial Diameter (cm)	0.1										
Standard Deviation On Initial Diameter (cm)	0.0										
Diameter Increase Ratio	0.0 : 3.0	+ - ↑ ↓									
Diameter Increase Time (time Unit)	0.0 : 20.0	+ - ↑ ↓									
Delay Before Diameter Increase (time Unit)	0.0 : 0.0	+ - ↑ ↓									
Standard Deviation On Diameter Increase Ratio	0.0										
Standard Deviation On Diameter Increase Time (time Unit)	0.0										
Standard Deviation On Delay Before Diameter Increase (time Unit)	0.0										

1_general		2_topology		3_branching		4_angles		5_diameter		6_reiteration	
reiteration											
MaxReit	0										
ReitAngle	30.0										
ReitRhizotaxy	180.0										
reitDistance	0.0 : 1.0	+ - ↑ ↓									
reitFrequency	0.0 : 100.0	+ - ↑ ↓									

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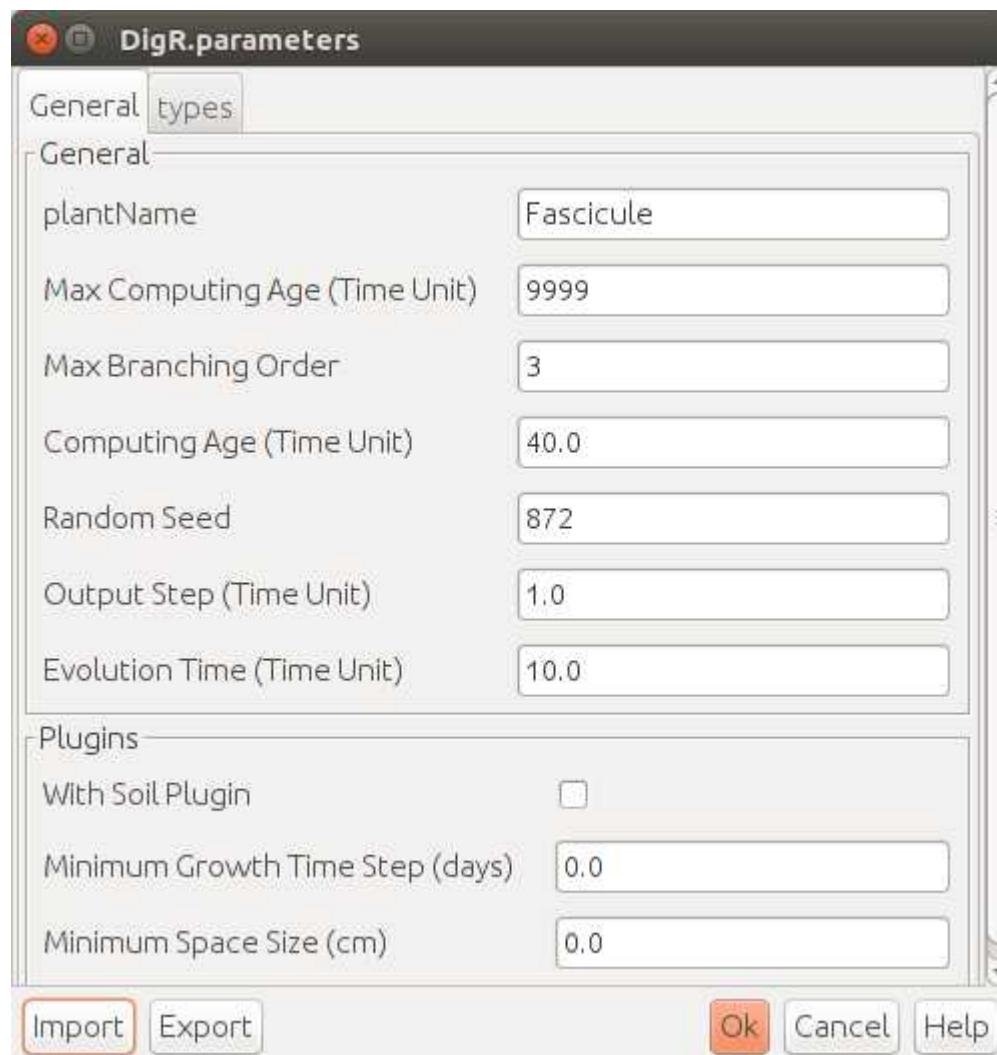


A good way to use DigR

1. AR-CHI-TEC-TU-RAL A-NA-LY-SIS
2. Create all types
3. For each type
 1. Adjust topology of the type
 2. Adjust branching
 3. Adjust geometry

Think about regular save !

Parametrisation of a “fasciculated” root system



Type 1

type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
topology					
Potential Number Of Roots	1				
Probability For Each Root	0.0:1.0				
Delay Before Growth (Time Unit)	0.0:0.0				
Growth Speed (cm/Time Unit)	0.0:1.0				
Percent Variation On Growth Speed (%)	0.0				
Death Probability	10.0:0.0				
Lag Before Pruning (Time Unit)	11.0:1.0				
Standard Deviation On Pruning Lag (Time Unit)	999.0				
Percent Not Pruned (%)	0.0				

type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
Branching					
Default_set : InterRamiDistance {0.0: 0.1; 2.0: 0.2; 5.0: 0.3; 0.5; 1: 100.0} typeFreq					
RamificationSet					
name	Default_set				
Type (index) Frequency (%)	1: 100.0				
Standard Deviation (%)	0.0				
Inter-Branching Distance (cm)	0.0: 0.1				
	2.0: 0.2				
	5.0: 3.0				
	5.1: 100.0				
Standard Deviation (cm)	0.0				

type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
diameter					
Initial Diameter (cm)	0.1				
Standard Deviation On Initial Diameter (cm)	0.0				
Diameter Increase Ratio	0.0:15.0				
	10.0:1.0				
Diameter Increase Time (time Unit)	0.0:10.0				
	0.0:0.0				
Delay Before Diameter Increase (time Unit)	0.0:0.0				
Standard Deviation On Diameter Increase Ratio	0.0				
Standard Deviation On Diameter Increase Time (time Unit)	0.0				
Standard Deviation On Delay Before Diameter Increase (time Unit)	0.0				

type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
angles					
insertionType	RHIZOTAXY				
Insertion Angle (degree)	60.0				
Standard Deviation On Insertion Angle (degree)	0.0				
Rhizotaxy Spiral Angle (degree)	0.0: 180.0				
Standard Deviation On Rhizotaxy (degree)	0.0				
Tortuosity Angle (degree)	3.0				
Standard Deviation On Tortuosity Angle (degree)	1.0				
Vertical Constraining Cone Opening Angle (degree)	45.0				
Horizontal Constraining Cone Opening Angle (degree)	45.0				
Constraining Cone Length (cm)	2.0				
Direction To Vertical (degree)	0.0:0.0				
Length To Reach Direction (cm)	0.0:0.0				

type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
reiteration					
MaxReit	0				
ReitAngle	30.0				
ReitRhizotaxy	180.0				
reitDistance	0.0:1.0				
reitFrequency	0.0:100.0				

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Type 2

type		type		type	
1_general		2_topology		3_branching	
Potential Number Of Roots	1	Branching		Default_set	interRamifDistance (0.0 : 2.0; 2.0 : 0.5) typeFrequency
Probability For Each Root	0.0 : 1.0				
Delay Before Growth (Time Unit)	0.0 : 3.0				
Growth Speed (cm/Time Unit)	0.0 : 1.0				
Percent Variation On Growth Speed (%)	20.0				
Death Probability	0.0 : 0.0				
Lag Before Pruning (Time Unit)	999.0				
Standard Deviation On Pruning Lag (Time Unit)	0.0				
Percent Not Pruned (%)	0.0				
RamificationSet					
name	Default_set				
Type (index) Frequency (%)	2 : 100.0				
Standard Deviation (%)	0.0				
Inter Branching Distance (cm)	0.0 : 2.0 2.0 : 0.5				
Standard Deviation (cm)	0.4				
diameter					
Initial Diameter (cm)	0.2				
Standard Deviation On Initial Diameter (cm)	0.03				
Diameter Increase Ratio	0.0 : 2.0				
Diameter Increase Time (time Unit)	0.0 : 40.0				
Delay Before Diameter Increase (time Unit)	0.0 : 0.0				
Standard Deviation On Diameter Increase Ratio	2.0				
Standard Deviation On Diameter Increase Time (time Unit)	10.0				
Standard Deviation On Delay Before Diameter Increase (time Unit)	0.0				
reiteration					
MaxReit	0				
ReitAngle	30.0				
Reitrhizotaxy	180.0				
reitDistance	0.0 : 1.0				
reitFrequency	0.0 : 100.0				

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Type 3

type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
topology					
Potential Number Of Roots	1				
Probability For Each Root	0.0:1.0				
Delay Before Growth (Time Unit)	0.0:3.0				
Growth Speed (cm/Time Unit)	0.0:1.0				
Percent Variation On Growth Speed (%)	40.0				
Death Probability	0.0:0.0 2.0:0.0 3.0:1.0				
Lag Before Pruning (Time Unit)	10.0				
Standard Deviation On Pruning Lag (Time Unit)	0.0				
Percent Not Pruned (%)	40.0				

type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
diameter					
Initial Diameter (cm)	0.1				
Standard Deviation On Initial Diameter (cm)	0.0				
Diameter Increase Ratio	0.0:1.0				
Diameter Increase Time (time Unit)	0.0:0.0				
Delay Before Diameter Increase (time Unit)	0.0:0.0				
Standard Deviation On Diameter Increase Ratio	0.0				
Standard Deviation On Diameter Increase Time (time Unit)	0.0				
Standard Deviation On Delay Before Diameter Increase (time Unit)	0.0				

type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
Branching					
Default_set : interRamifDistance (0.0 : 1.0,) typeFrequency					
RamificationSet					
name	Default_set				
Type (index) Frequency (%)	0.100.0				
Standard Deviation (%)	0.0				
Inter Branching Distance (cm)	0.0:1.0				
Standard Deviation (cm)	0.0				

type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
reiteration					
MaxReit	0				
ReitAngle	30.0				
ReitRhizotaxy	180.0				
reitDistance	0.0:1.0				
reitFrequency	0.0:100.0				

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type

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
angles					
insertionType	RHIZOTAXY				
Insertion Angle (degree)	60.0				
Standard Deviation On Insertion Angle (degree)	0.0				
Rhizotaxy Spiral Angle (degree)	0.0:137.0				
Standard Deviation On Rhizotaxy (degree)	20.0				
Tortuosity Angle (degree)	10.0				
Standard Deviation On Tortuosity Angle (degree)	0.0				
Vertical Constraining Cone Opening Angle (degree)	45.0				
Horizontal Constraining Cone Opening Angle (degree)	45.0				
Constraining Cone Length (cm)	99999.0				
Direction To Vertical (degree)	0.0:0.0				
Length To Reach Direction (cm)	0.0:0.0				

Ok Cancel

Ok Cancel

Ok Cancel

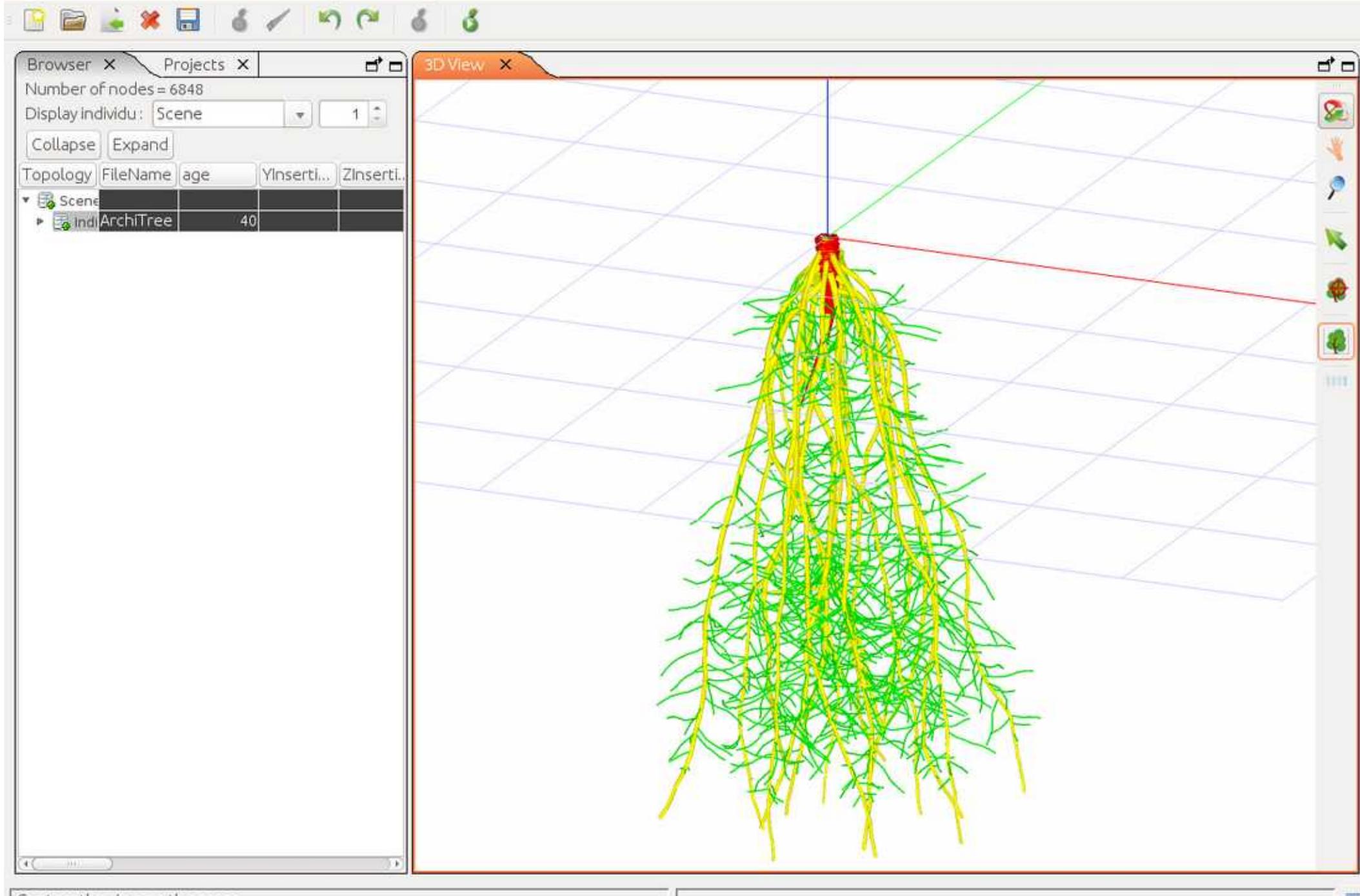
Ok Cancel

Type 4

1_general	2_topology	3_branching	4_angles	5_diameter	6_reiteration
topology					
Potential Number Of Roots	1				
Probability For Each Root	0.0:1.0				
Delay Before Growth (Time Unit)	0.0:0.0				
Growth Speed (cm/Time Unit)	0.0:1.0				
Percent Variation On Growth Speed (%)	0.0				
Death Probability	0.0:0.0				
Lag Before Pruning (Time Unit)	999.0				
Standard Deviation On Pruning Lag (Time Unit)	0.0				
Percent Not Pruned (%)	0.0				
diameter					
Initial Diameter (cm)	1.0				
Standard Deviation On Initial Diameter (cm)	0.0				
Diameter Increase Ratio	0.0:1.0				
Diameter Increase Time (time Unit)	0.0:0.0				
Delay Before Diameter Increase (time Unit)	0.0:0.0				
Standard Deviation On Diameter Increase Ratio	0.0				
Standard Deviation On Diameter Increase Time (time Unit)	0.0				
Standard Deviation On Delay Before Diameter Increase (time Unit)	0.0				
reiteration					
MaxReit	0				
ReitAngle	30.0				
ReitRhizotaxy	180.0				
reitDistance	0.0:1.0				
reitFrequency	0.0:100.0				

d.fr

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Exercice :
How to modify this bad
“fasciculated” system
to get a better one ?

A good way to use DigR

1. AR-CHI-TEC-TU-RAL A-NA-LY-SIS
2. Create all types
3. For each type
 1. Adjust topology of the type
 2. Adjust branching
 3. Adjust geometry

Think about regular save !

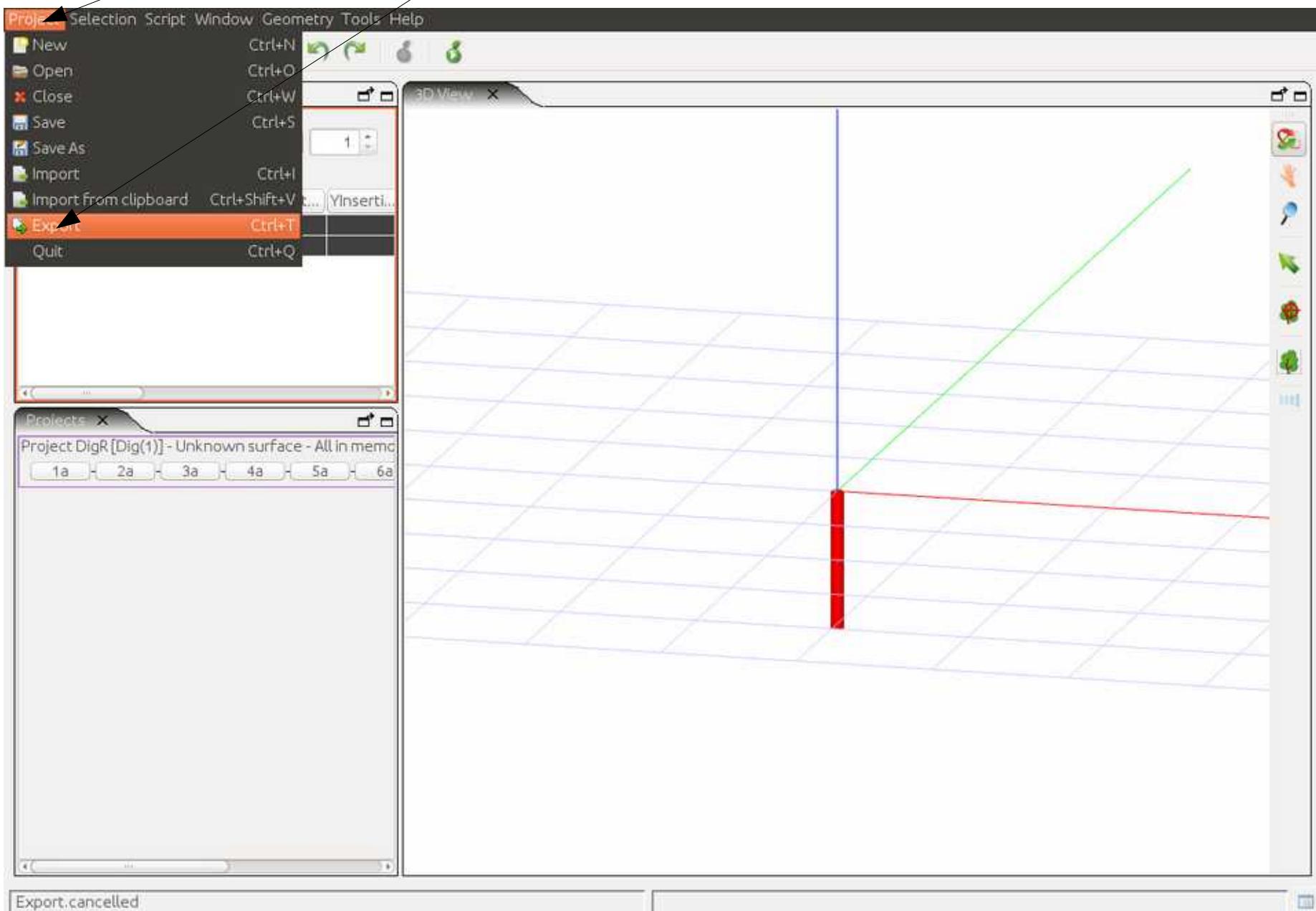
What for ?

Root shape export

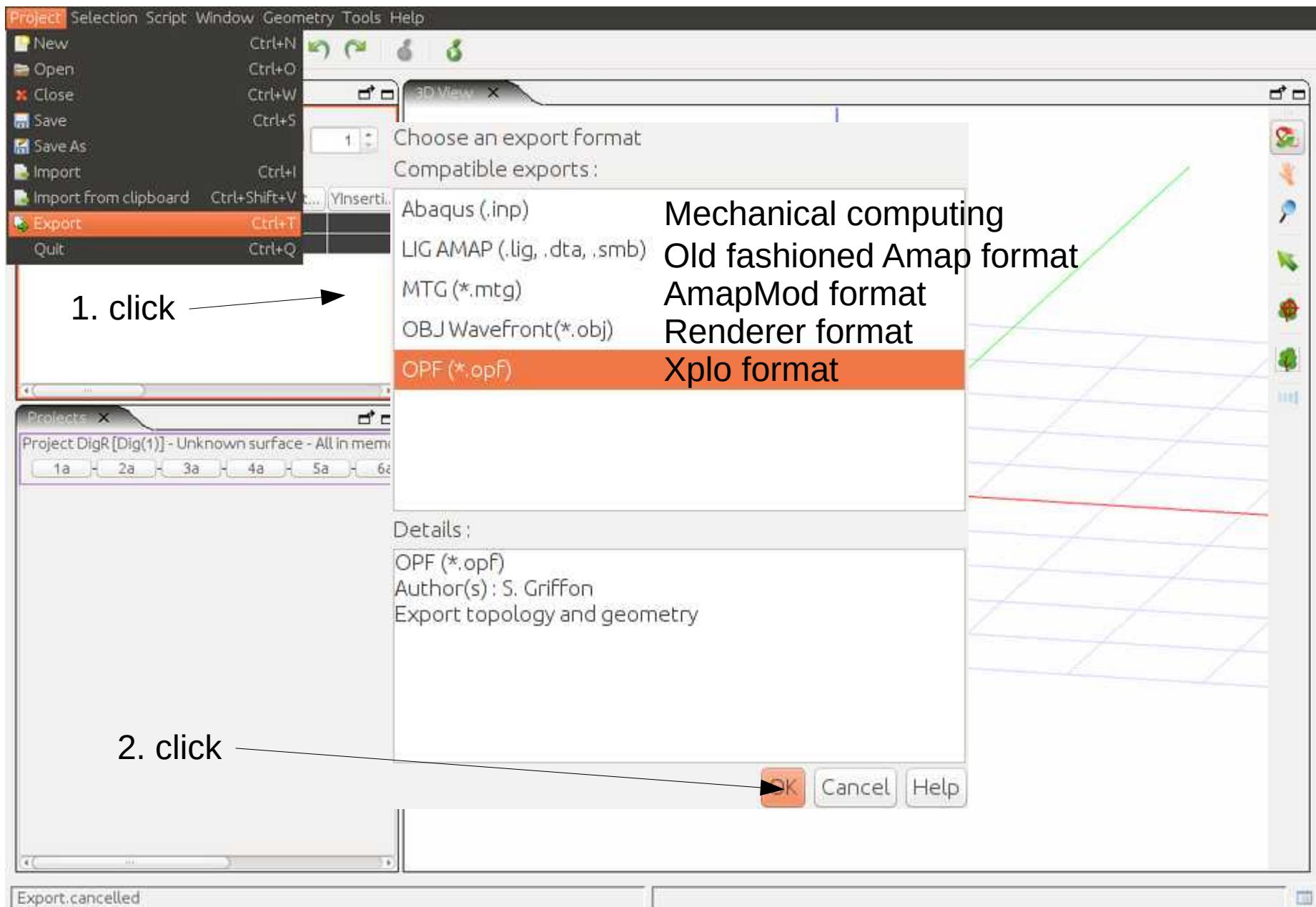
1. click

2. click

Root shape export



Root shape export



What for ?

Traits values extraction

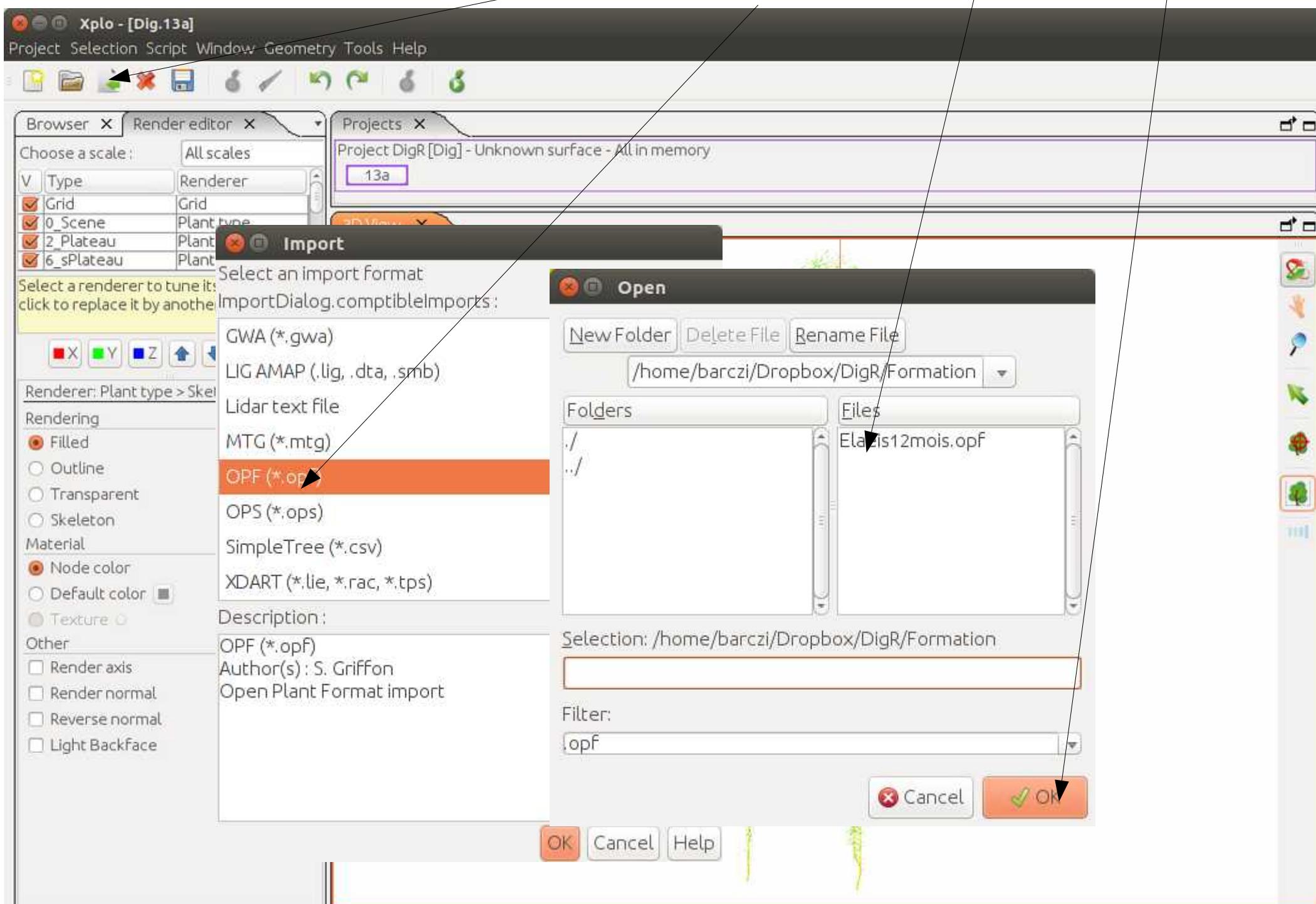
load "Elaeis12mois.opf"

1. click

2. click

3. click

4. click



load "Elaeis12mois.opf"

Xplo - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Browser X Render editor X

Choose a scale: All scales

V	Type	Renderer
<input checked="" type="checkbox"/>	Grid	Grid
<input checked="" type="checkbox"/>	0_Scene	Plant type
<input checked="" type="checkbox"/>	2_Plateau	Plant type
<input checked="" type="checkbox"/>	6_sPlateau	Plant type

Select a renderer to tune its options, right click to replace it by another one

Renderer: Plant type > Sketcher

Rendering

Filled

Outline

Transparent

Skeleton

Material

Node color

Default color

Texture

Other

Render axis

Render normal

Reverse normal

Light Backface

Projects X

Project DigR [Dig] - Unknown surface - All in memory

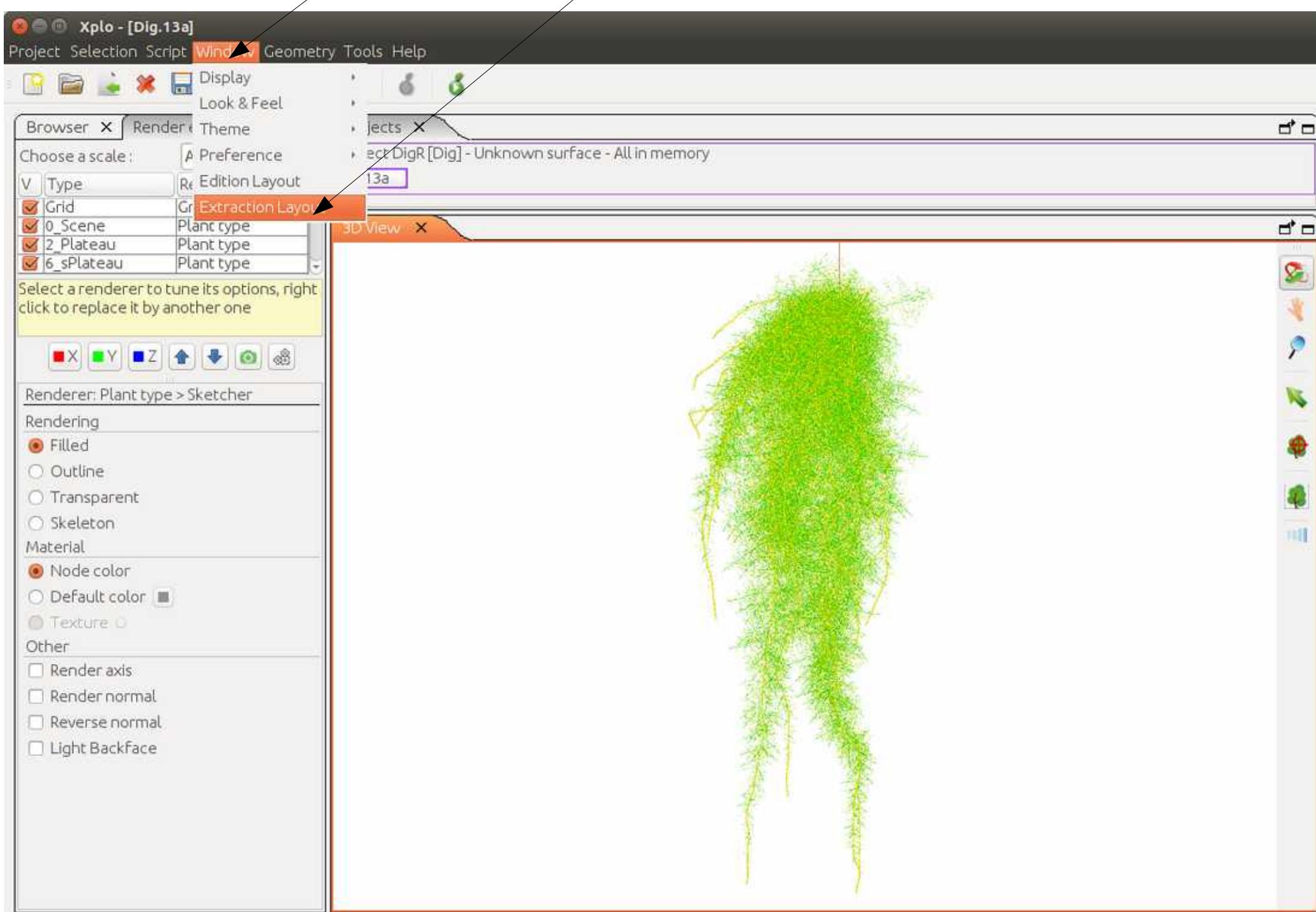
13a

3D View X

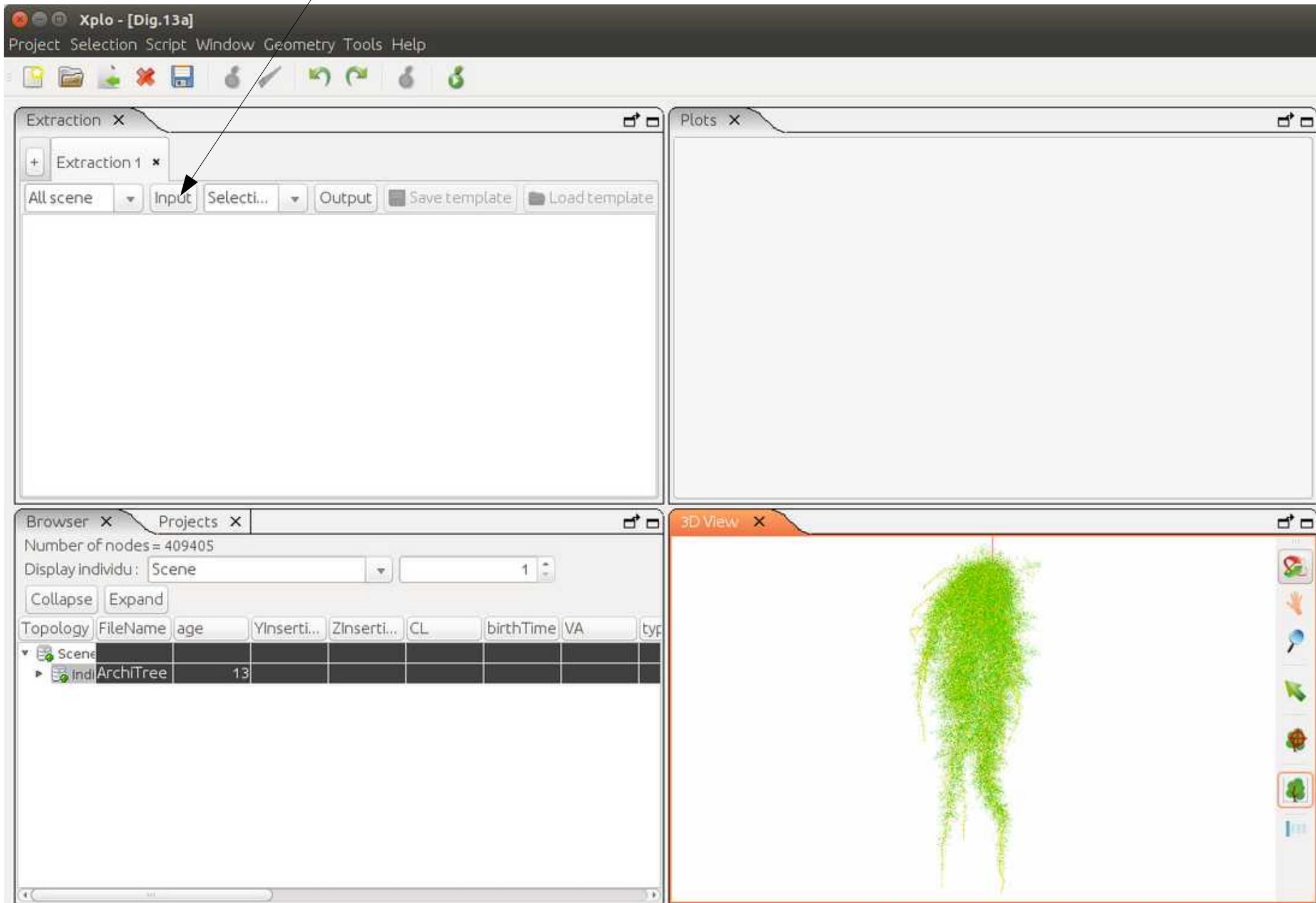
Centers the view on the scene

Question :

How many roots with type xxx in this mess ?

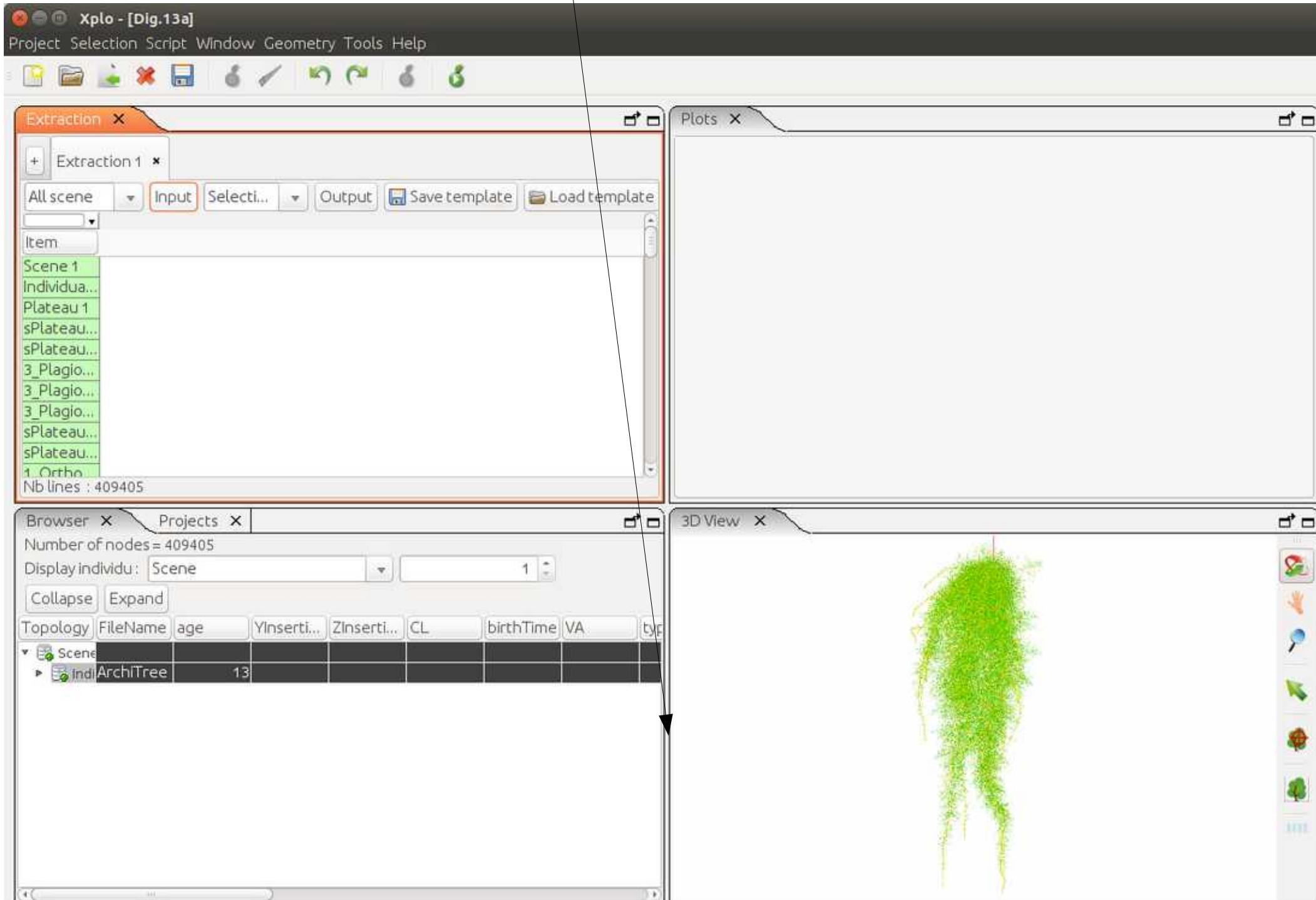


1.click



Centers the view on the scene

Right drag to increase browser window



Centers the view on the scene

1. Drag “Length” column to the left

2. Pick (after zooming)

Xpto - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Extraction x

+ Extraction 1 x

All scene Input Selecti... Output Save template Load template

1_Ortho

Item

1_Ortho_R1_VB 2
Nb lines : 40

Plots x

3D View x

Number of nodes = 409405

Display individu: Scene

1

Collapse Expand

Topology

FileName	age	Yinserti...	Zinserti...	Length	CL	birthTime	VA	type	Name
sPlateau 45				0.025		9.75			
sPlateau 46				0.025		10			
sPlateau 47				0		10			
1_Ortho_R1_VB 2	28.068	0		40	10	10	10	11_Ortho	
s1_Ortho_R1_VB 1				0.338		10.016			
s1_Ortho_R1_VB 2				0.001		10.016			
s1_Ortho_R1_VB 3				0.928		10.06			
s1_Ortho_R1_VB 4				1.291		10.122			
s1_Ortho_R1_VB 5				1.258		10.182			
s1_Ortho_R1_VB 6				0.251		10.194			
s1_Ortho_R1_VB 7				0.001		10.194			
s1_Ortho_R1_VB 8				1.028		10.243			

Centers the view on the scene

The screenshot shows the Xpto software interface with several panels:

- Extraction x**: Shows a list of items under "Extraction 1" with a red border around the list area.
- Plots x**: An empty plot window.
- Browser x Projects x**: Displays the number of nodes (409405) and allows selecting individuals by scene. A red arrow points to the "Scene" dropdown.
- 3D View x**: Shows a 3D point cloud of a human figure. A red box highlights a specific area on the head, and a black arrow points to this highlighted area from the text "2. Pick (after zooming)".

The central part of the interface is a table titled "Topology" showing node details. The row for "1_Ortho_R1_VB 2" is highlighted with a red background. A black arrow points to the "Length" column header from the text "1. Drag ‘Length’ column to the left".

1. input type name (with a * at the end)

2. there are 40 rootss with type Ortho_VB

Xpto - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Extraction x

+ Extraction 1 x

All scene Input Select... Output Save template Load template

1_Ortho

Item

1_Ortho_R1_VB 2
Nb lines : 40

Plots x

3D View x

Number of nodes = 409405

Display individu: Scene

1

Collapse Expand

Topology

FileName	age	Yinserti...	Zinserti...	Length	CL	birthTime	VA	type	Name
sPlateau 45				0.025		9.75			
sPlateau 46				0.025		10			
sPlateau 47				0		10			
1_Ortho_R1_VB 2		28.068	0		40	10	10	11_Ortho	
s1_Ortho_R1_VB 1				0.338		10.016			
s1_Ortho_R1_VB 2				0.001		10.016			
s1_Ortho_R1_VB 3				0.928		10.06			
s1_Ortho_R1_VB 4				1.291		10.122			
s1_Ortho_R1_VB 5				1.258		10.182			
s1_Ortho_R1_VB 6				0.251		10.194			
s1_Ortho_R1_VB 7				0.001		10.194			
s1_Ortho_R1_VB 8				1.028		10.243			

Centers the view on the scene

The screenshot displays the Xpto software interface with four main windows:

- Extraction x**: Shows a list of 40 entries under the heading "1_Ortho", each labeled "1_Ortho_R1_VB 2". A tooltip "Nb lines : 40" is shown below the list.
- Plots x**: An empty plot window.
- Browser x Projects x**: Displays node information with "Number of nodes = 409405" and a table showing topology details for "1_Ortho_R1_VB 2" and its children "s1_Ortho_R1_VB 1" through "s1_Ortho_R1_VB 8".
- 3D View x**: A 3D visualization window showing a green point cloud with a red rectangular selection box highlighting a portion of it.

1. input type name (with a * at the end)

2. there are 1642 roots with type R2_H

Xplo - [Editor : /home/barczi/Dropbox/DigR/Formation/Elaeis12mois.opf.+0a]

Project Selection Script Window Geometry Tools Help

Extraction x

+ Extraction 1 x

All scene Input Select... Output Save template Load template

2_R2_H*

Item

2_R2_H3
Nb lines : 1642

Plots x

3D View x

Number of nodes = 409405

Display individu: Scene 1

Collapse Expand

Topology

	FileName	age	Yinserti...	Zinserti...	CL	birthTime	VA	type	Name
▶ s1_Ortho_R1_VB 2						10.107			
▶ s1_Ortho_R1_VB 3						10.123			
▶ s1_Ortho_R1_VB 4						10.177			
▶ s1_Ortho_R1_VB 5						10.184			
▶ s1_Ortho_R1_VB 6						10.245			
▼ s1_Ortho_R1_VB 7						10.266			
+ 2_R2_H 3		60	0			10.766		2_R2_H	
▶ s1_Ortho_R1_VB 8						10.292			
▶ s1_Ortho_R1_VB 9						10.306			
▶ s1_Ortho_R1_VB 10						10.368			
▶ s1_Ortho_R1_VB 11						10.429			
▶ s1_Ortho_R1_VB 12						10.441			

Centers the view on the scene

The screenshot displays the Xplo software interface with four main panels: Extraction, Plots, Browser, and 3D View.

- Extraction Panel:** Shows an extraction named "Extraction 1". The "Input" dropdown is set to "All scene". The "type" dropdown is set to "2_R2_H*". A list of items shows 1642 entries labeled "2_R2_H3".
- Plots Panel:** An empty plot area.
- Browser Panel:** Displays node information. "Number of nodes = 409405". Under "Display individu:", "Scene" is selected. A table lists nodes with columns: Topology, FileName, age, Yinserti..., Zinserti..., CL, birthTime, VA, type, and Name. One row is highlighted for "2_R2_H 3" with values: age=60, birthTime=10.766, type=2_R2_H.
- 3D View Panel:** Shows a 3D point cloud visualization of a tree trunk and branches, with a green color scheme.

1. Click

2. that are nearly everywhere inside the root system

Xplo - [Editor : /home/barczi/Dropbox/DigR/Formation/Elaeis12mois.opf.+0a]

Project Selection Script Window Geometry Tools Help

Extraction X

+ Extraction 1 *

All scene Input Selecti... Output Save template Load template

2_R2_H*

Item

2_R2_H3
Nb lines : 1642

Plots X

3DView X

Number of nodes = 409405

Display individu: Scene 1

Collapse Expand

Topology

FileName	age	Yinserti...	Zinserti...	CL	birthTime	VA	type	Name
s1_Ortho_R1_VB 34					12.094			
s1_Ortho_R1_VB 35					12.097			
s1_Ortho_R1_VB 36					12.138			
s1_Ortho_R1_VB 37					12.148			
s1_Ortho_R1_VB 38					12.2			
s1_Ortho_R1_VB 39					12.215			
s1_Ortho_R1_VB 40					12.25			
s1_Ortho_R1_VB 41					12.29			
2_R2_H3	60	0			12.79	2_R2_H		
s1_Ortho_R1_VB 42					12.302			
s1_Ortho_R1_VB 43					12.354			
s1_Ortho_R1_VB 44					12.39			

Centers the view on the scene

Question :

What is the cumulated length of roots with type xxx ?

1. Right click

2. Click

Xplo - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Extraction x

All scene Input Select... Output Save template Load template

Item:

2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3 Edit label
2_R2_H3
2_R2_H3 Item: Add a column
2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3
Nb lines : 1642

Plots x

3D View x

Number of nodes = 409405

Display individu: Scene

Topology

FileName	age	Yinserti...	Zinserti...	Length	CL	birthTime	VA	type	Name
sPlateau 45				0.025		9.75			
sPlateau 46				0.025		10			
sPlateau 47				0		10			
+ 1_Ortho_R1_VB 2		28.068	0		40	10	10	11_Ortho	
s1_Ortho_R1_VB 1				0.338		10.016			
s1_Ortho_R1_VB 2				0.001		10.016			
2_R2_H 3		60	0			10.516		22_R2_H	
s1_Ortho_R1_VB 3				0.928		10.06			
s1_Ortho_R1_VB 4				1.291		10.122			
s1_Ortho_R1_VB 5				1.258		10.182			
s1_Ortho_R1_VB 6				0.251		10.194			
s1_Ortho_R1_VB 7				0.001		10.194			

Centers the view on the scene

The screenshot displays the Xplo software interface with four main windows: Extraction, Plots, Browser, and 3D View. The Extraction window (top left) shows a list of items under 'Extraction 1' with a context menu open over the second item, listing options like 'Edit label' and 'Item: Add a column'. The Plots window (top right) is empty. The Browser window (bottom left) displays a hierarchical topology tree and a table of node properties. The 3D View window (bottom right) shows a 3D point cloud of a tree with various editing tools visible on its toolbar.

1. Click

2. select

Xpto - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Extraction x

All scene Input Selection... Output Save tem...

2_R2_H*

Item

2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3 Edit label
2_R2_H3 Item: Add a column
2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3
Nb lines : 1642

Browser x Projects x

Number of nodes = 409405

Display individu: Scene

Collapse Expand

Topology

FileName	age	YInserti...	ZInserti...	Length	CL	birthTime	VA	type	Name
sPlateau 45				0.025		9.75			
sPlateau 46				0.025		10			
sPlateau 47				0		10			
+ 1_Ortho_R1_VB 2		28.068	0	40	10	10	11_Ortho		
s1_Ortho_R1_VB 1				0.338		10.016			
s1_Ortho_R1_VB 2				0.001		10.016			
2_R2_H 3		60	0			10.516		22_R2_H	
s1_Ortho_R1_VB 3				0.928		10.06			
s1_Ortho_R1_VB 4				1.291		10.122			
s1_Ortho_R1_VB 5				1.258		10.182			
s1_Ortho_R1_VB 6				0.251		10.194			
s1_Ortho_R1_VB 7				0.001		10.194			

Plots x

Item : Add a column

Column type

Attribute

Navigation

Topology

Geometry

Statistics

Script

Close Add

3D View x

Centers the view on the scene

The screenshot shows the Xpto software interface with several windows open. The 'Extraction' window (top left) contains a table with 1642 rows, one of which is highlighted with a red background. A context menu is open over this row, with the 'Item' option selected. The 'Plots' window (top right) has a 'Item : Add a column' dialog box open, listing 'Column type' options: Attribute, Navigation, Topology, Geometry, Statistics, and Script. The 'Statistics' option is highlighted with an orange background. The 'Browser' window (bottom left) shows a tree view of topology elements like 'sPlateau' and 's1_Ortho_R1_VB'. The '3D View' window (bottom right) displays a 3D point cloud visualization of the scene.

1. Click

2. select

Xpto - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Extraction x

+ Extraction 1 x

All scene Input Selecti... Output Save t

2_R2_H*

Item

2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3 Edit label
2_R2_H3 Item: Add a column
2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3
Nb lines : 1642

Browser x Projects x

Number of nodes = 409405

Display individu: Scene

Collapse Expand

Topology

FileName	age	YInserti...	ZInserti...	Length	CL	birthTime	VA	type	Name
sPlateau 45				0.025		9.75			
sPlateau 46				0.025		10			
sPlateau 47				0		10			
1_Ortho_R1_VB 2		28.068	0	40	10	10	11_Ortho		
s1_Ortho_R1_VB 1				0.338		10.016			
s1_Ortho_R1_VB 2				0.001		10.016			
2_R2_H 3		60	0			10.516		22_R2_H	
s1_Ortho_R1_VB 3				0.928		10.06			
s1_Ortho_R1_VB 4				1.291		10.122			
s1_Ortho_R1_VB 5				1.258		10.182			
s1_Ortho_R1_VB 6				0.251		10.194			
s1_Ortho_R1_VB 7				0.001		10.194			

Plots x

Item : Add a column

Column type Statistics

Options

Function Sum

Attribute birthTime

Navigation Function GeometricalConstraint

Type filter All t

HA
Length
Name
type
VA

3D View x

Centers the view on the scene

1. Click

2. Click

Xpto - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Extraction x

All scene Input Selection... Output Save t

2_R2_H*

Item

2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3 Edit label
2_R2_H3 Item: Add a column
2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3
2_R2_H3
Nb lines : 1642

Browser x Projects x

Number of nodes = 409405

Display individu: Scene

Collapse Expand

Topology

FileName	age	YInserti...	ZInserti...	Length	CL	birthTime	VA	type	Name
sPlateau 45				0.025		9.75			
sPlateau 46				0.025		10			
sPlateau 47				0		10			
+ 1_Ortho_R1_VB 2		28.068	0	40	10	10	11_Ortho		
s1_Ortho_R1_VB 1				0.338		10.016			
s1_Ortho_R1_VB 2				0.001		10.016			
2_R2_H 3		60	0			10.516		22_R2_H	
s1_Ortho_R1_VB 3				0.928		10.06			
s1_Ortho_R1_VB 4				1.291		10.122			
s1_Ortho_R1_VB 5				1.258		10.182			
s1_Ortho_R1_VB 6				0.251		10.194			
s1_Ortho_R1_VB 7				0.001		10.194			

Plots x

Item : Add a column

Column type Statistics

Options

Function Sum

Attribute Length

Navigation Function Components

Type filter All types

Add Close

3D View x

Centers the view on the scene

The screenshot shows the Xpto software interface with several panels:

- Extraction Panel:** Shows an extraction named "Extraction 1" with a dropdown menu open over item "2_R2_H3". The menu includes "Edit label" and "Item: Add a column".
- Plots Panel:** A dialog box titled "Item : Add a column" with settings for "Statistics" column type, "Sum" function, "Length" attribute, and "Components" navigation function.
- Browser Panel:** Displays the project structure and node details. A node "s1_Ortho_R1_VB 2" is selected, highlighted in orange.
- 3D View Panel:** Shows a 3D point cloud visualization of the scene.

Annotations with arrows indicate the steps: "1. Click" points to the "Edit label" option in the context menu; "2. Click" points to the "Add" button in the "Item : Add a column" dialog.

Length of each root

Cumulated length into selection

Xplo - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Extraction x

All scene Input Selection... Output Save template Load template

Item Sum_Le...

2_R2_H3	32.169
2_R2_H3	40
2_R2_H3	39.04
2_R2_H3	38.523
2_R2_H3	30.466
2_R2_H3	38.037
2_R2_H3	37.206
2_R2_H3	32.673
2_R2_H3	36.244
2_R2_H3	32.133
2_R2_H3	31.254

Nb lines : 1642 Sum = 16979.134139516824 Mean = 10.34052018240973

Plots x

Browser x Projects x

Number of nodes = 409405

Display individu: Scene

Topology

- sPlateau 45
- sPlateau 46
- sPlateau 47
 - + 1_Ortho_R1_VB 2
 - s1_Ortho_R1_VB 1
 - s1_Ortho_R1_VB 2**
 - s1_Ortho_R1_VB 3
 - s1_Ortho_R1_VB 4
 - s1_Ortho_R1_VB 5
 - s1_Ortho_R1_VB 6
 - s1_Ortho_R1_VB 7

3D View x

1.click droit

2. select

Xplo - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Extraction x

+ Extraction 1 x

All scene Input Selecti... Output Save template Load template

2_R2_H* Item Sum_Le...

2_R2_H3	32.169
2_R2_H3	40
2_R2_H3	39.04
2_R2_H3	38.523
2_R2_H3	30.466
2_R2_H3	38.037
2_R2_H3	37.206
2_R2_H3	33.672
2_R2_H3	38
2_R2_H3	31
2_R2_H3	31

Nb lines : 1642 Si 018240973

Hide column: Sum_Length_Components
Copy as attribute
Sum_Length_Components : Distribution

Plots x

Browser x Projects x

Number of nodes = 409405

Display individu: Scene

Collapse Expand

Topology

FileName	age	YInserti...	ZInserti...	Length	CL	birthTime	VA	type	Name
sPlateau 45				0.025		9.75			
sPlateau 46				0.025		10			
sPlateau 47				0		10			
1_Ortho_R1_VB 2		28.068	0		40	10	10	11_Ortho	
s1_Ortho_R1_VB 1				0.338		10.016			
s1_Ortho_R1_VB 2				0.001		10.016			
2_R2_H 3		60	0			10.516		22_R2_H	
s1_Ortho_R1_VB 3				0.928		10.06			
s1_Ortho_R1_VB 4				1.291		10.122			
s1_Ortho_R1_VB 5				1.258		10.182			
s1_Ortho_R1_VB 6				0.251		10.194			
s1_Ortho_R1_VB 7				0.001		10.194			

3D View x

Centers the view on the scene

Xpto - [Dig.13a]

Project Selection Script Window Geometry Tools Help

Extraction X

+ Extraction 1 x

All scene Input Select... Output Save template L

2_R2_H*

Item Sum_Le...

2_R2_H3	32.169
2_R2_H3	40
2_R2_H3	39.014
2_R2_H3	38.523
2_R2_H3	30.466
2_R2_H3	38.037
2_R2_H3	37.206
2_R2_H3	32.673
2_R2_H3	36.244
2_R2_H3	32.133
2_R2_H3	31.254

Nb lines : 1642 Sum = 16979.134139516824 Mean = 10.34052018240973

Plots X

Sum_Length_Components distribution x

Step 4 Min 0 Max 44 /

Sum_Length_Components distribution

Classes

Sum_Length_Components

Mode: FREQUENCY

Browser X Projects X

Number of nodes = 409405

Display individu: Scene

1

Collapse Expand

Topology

FileName	age	Yinserti...	Zinserti...	Length	CL	birthTime	VA	type	Name
sPlateau 45				0.025		9.75			
sPlateau 46				0.025		10			
sPlateau 47				0		10			
1_Ortho_R1_VB 2		28.068	0		40	10	10	11_Ortho	
s1_Ortho_R1_VB 1				0.338		10.016			
s1_Ortho_R1_VB 2				0.001		10.016			
2_R2_H 3		60	0			10.516		22_R2_H	
s1_Ortho_R1_VB 3				0.928		10.06			
s1_Ortho_R1_VB 4				1.291		10.122			
s1_Ortho_R1_VB 5				1.258		10.182			
s1_Ortho_R1_VB 6				0.251		10.194			
s1_Ortho_R1_VB 7				0.001		10.194			

3D View X