Earth and Life Institute
Unité d'écophysiologie et d'amélioration végétale

SmartRoot gets topological

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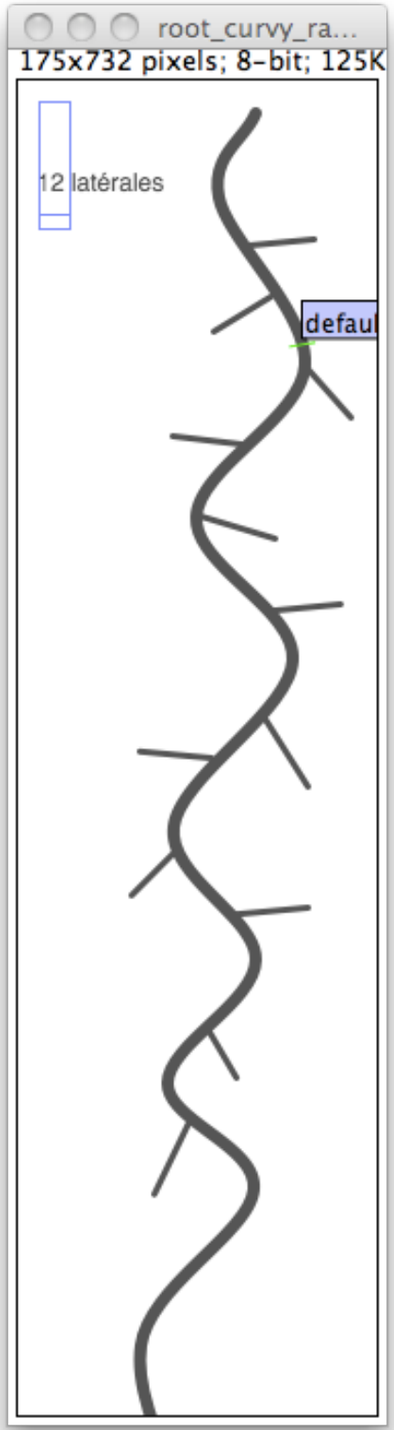
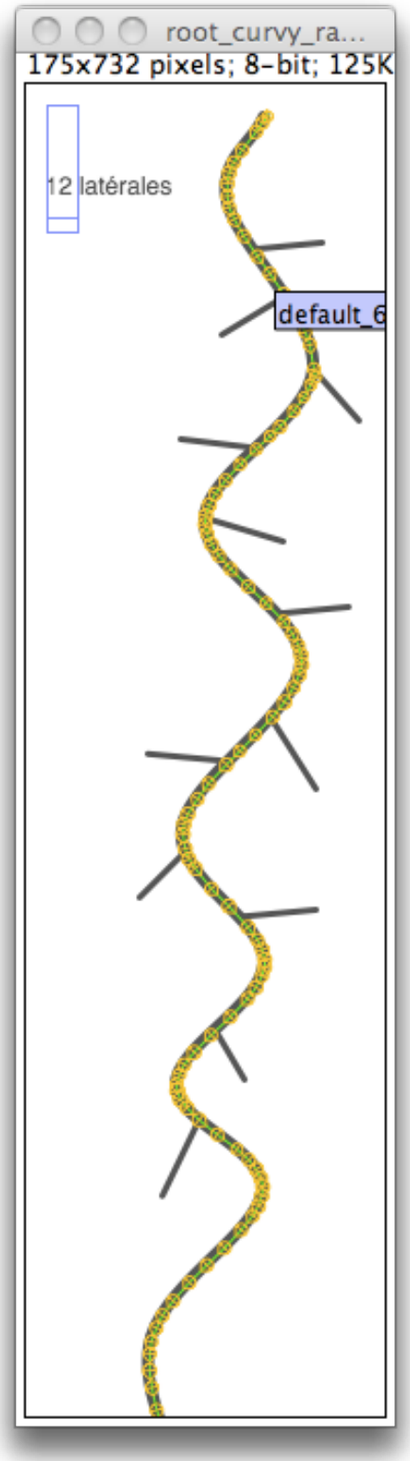
PAI Meeting - 27 / 01 / 2010

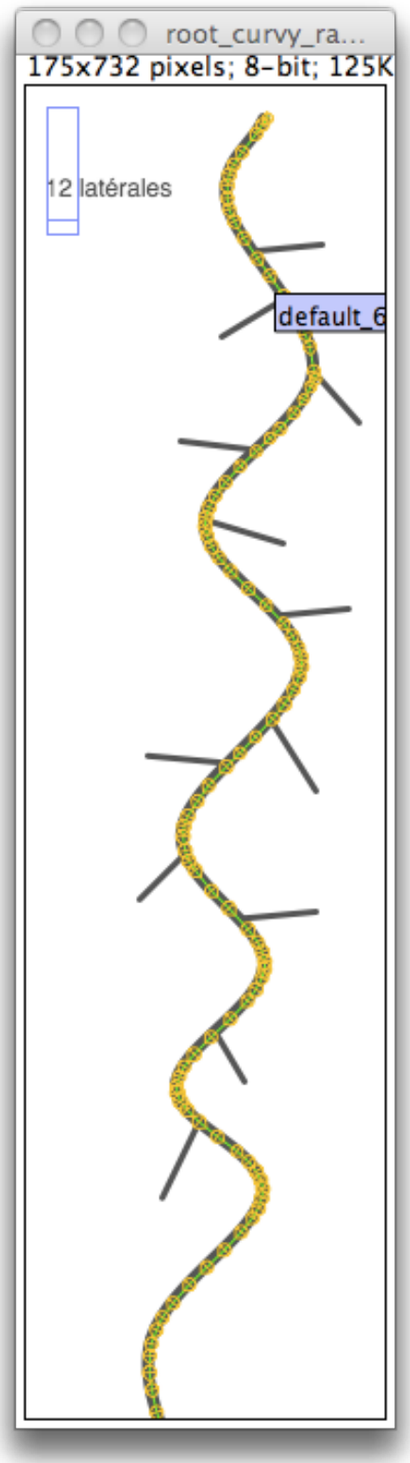
Semi-automated root drawing



Semi-automated root drawing

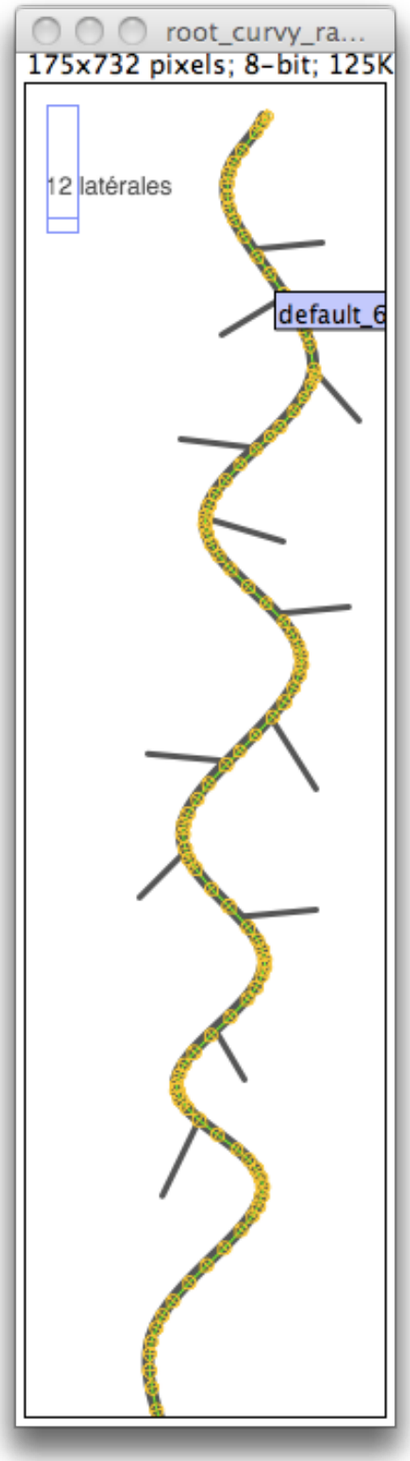


Semi-automated root drawing

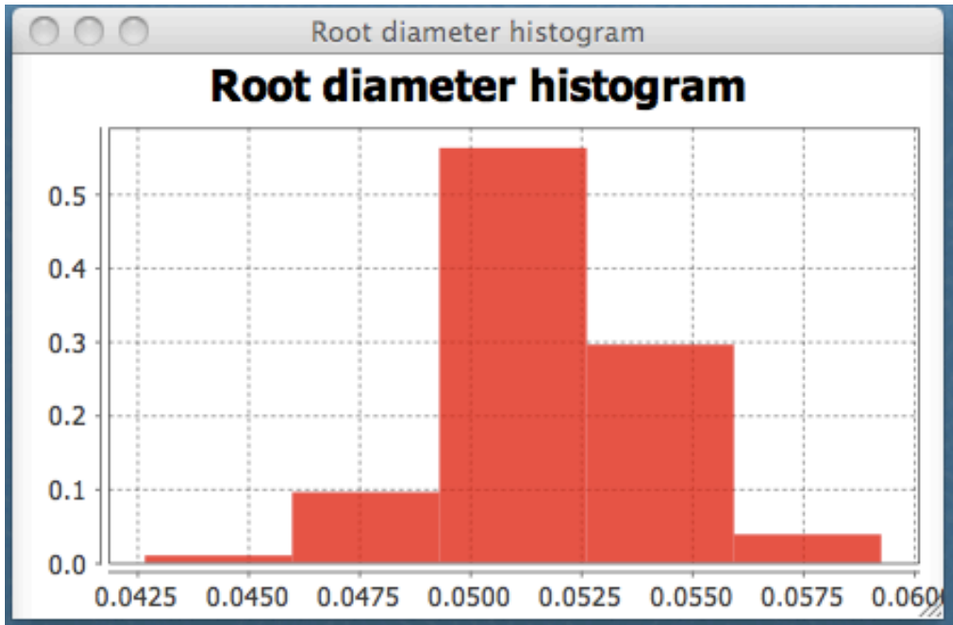


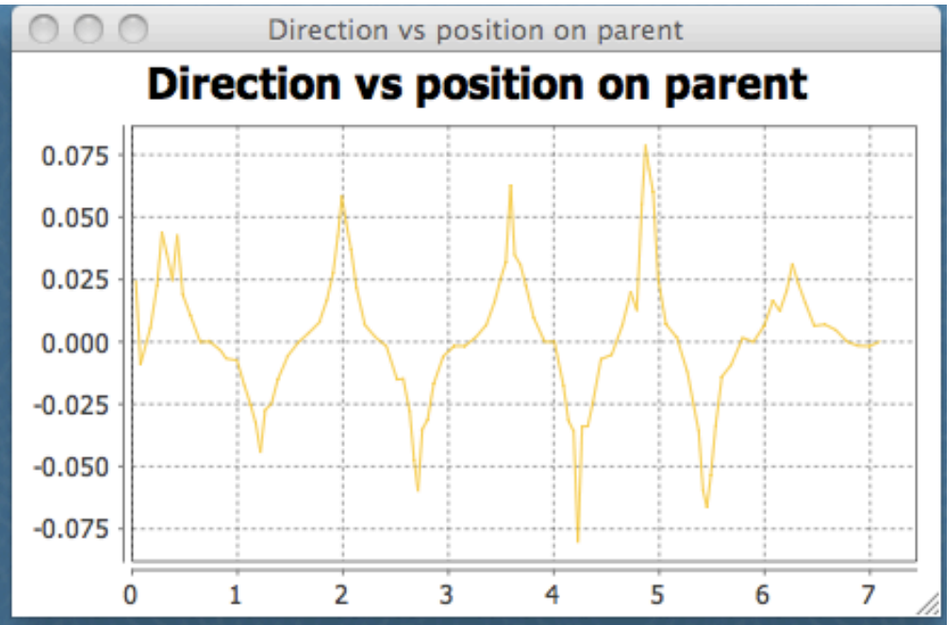
- Sub-pixel resolution, vector based
- Individual root as object
- Partial analysis of messy images
- OS independent (written in Java)

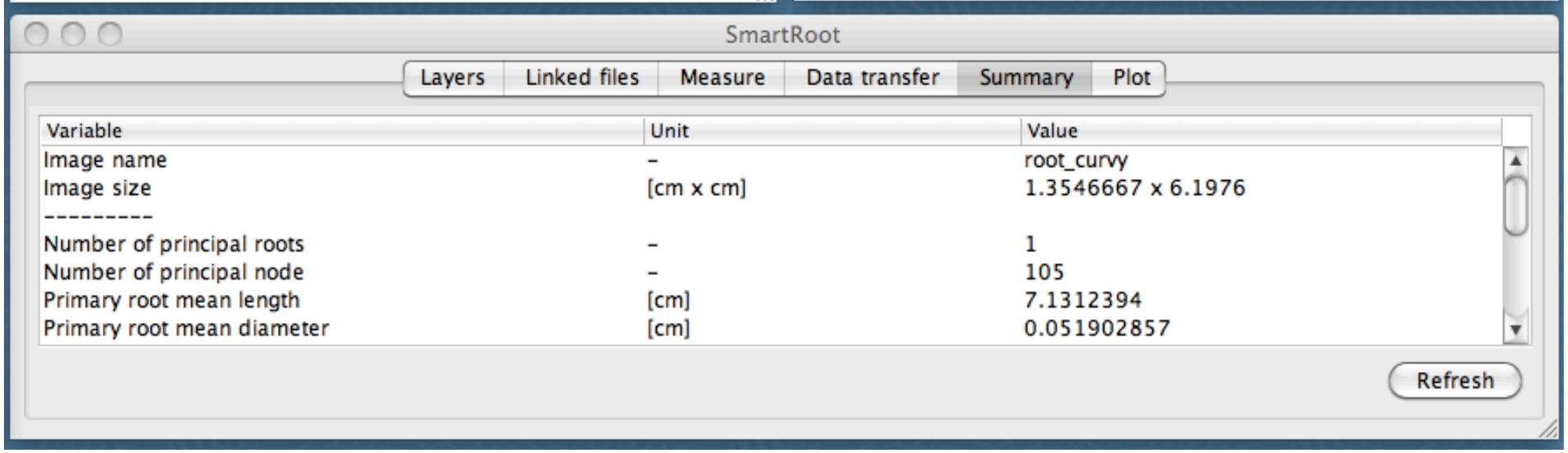
Semi-automated root drawing



- Sub-pixel resolution, vector based

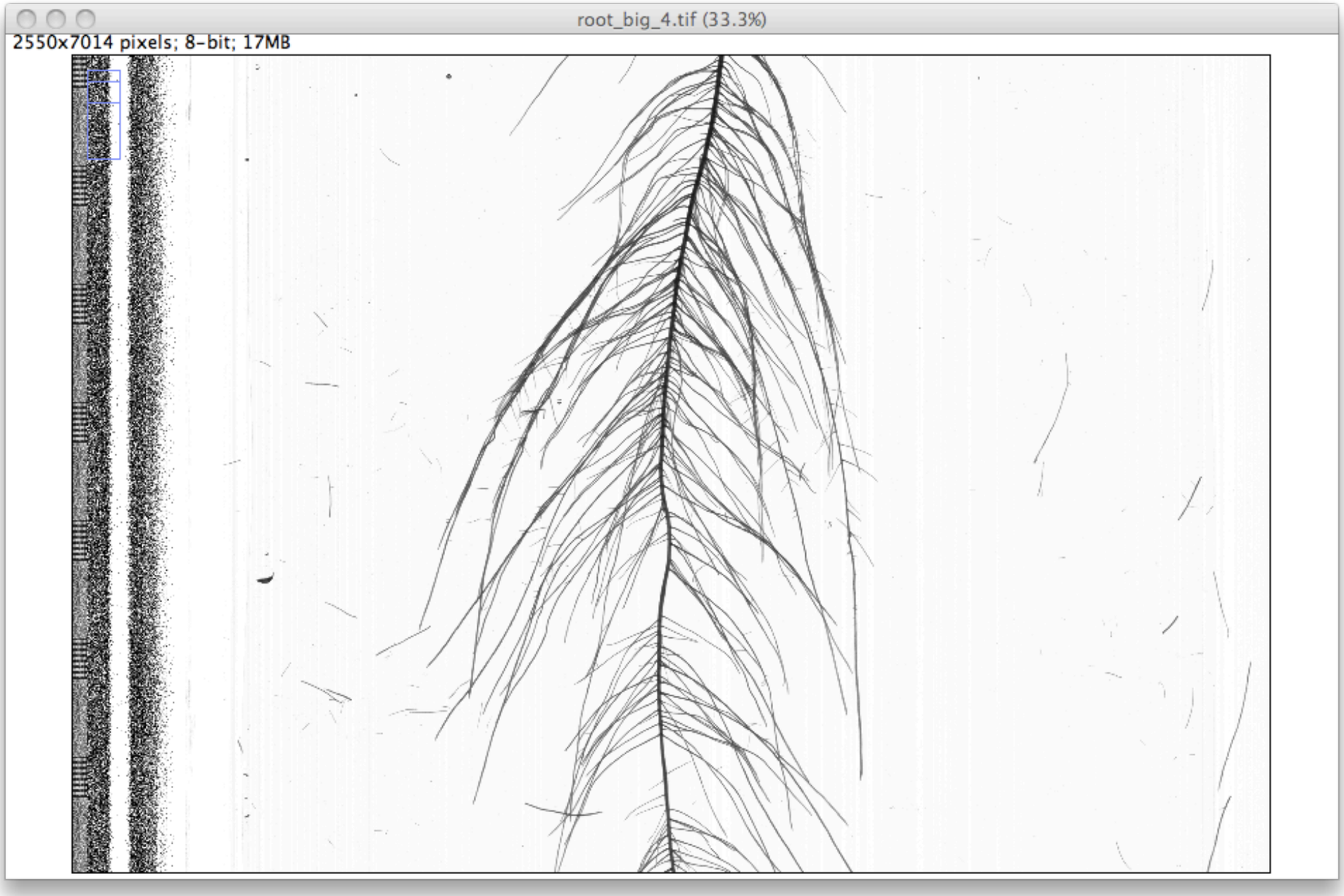






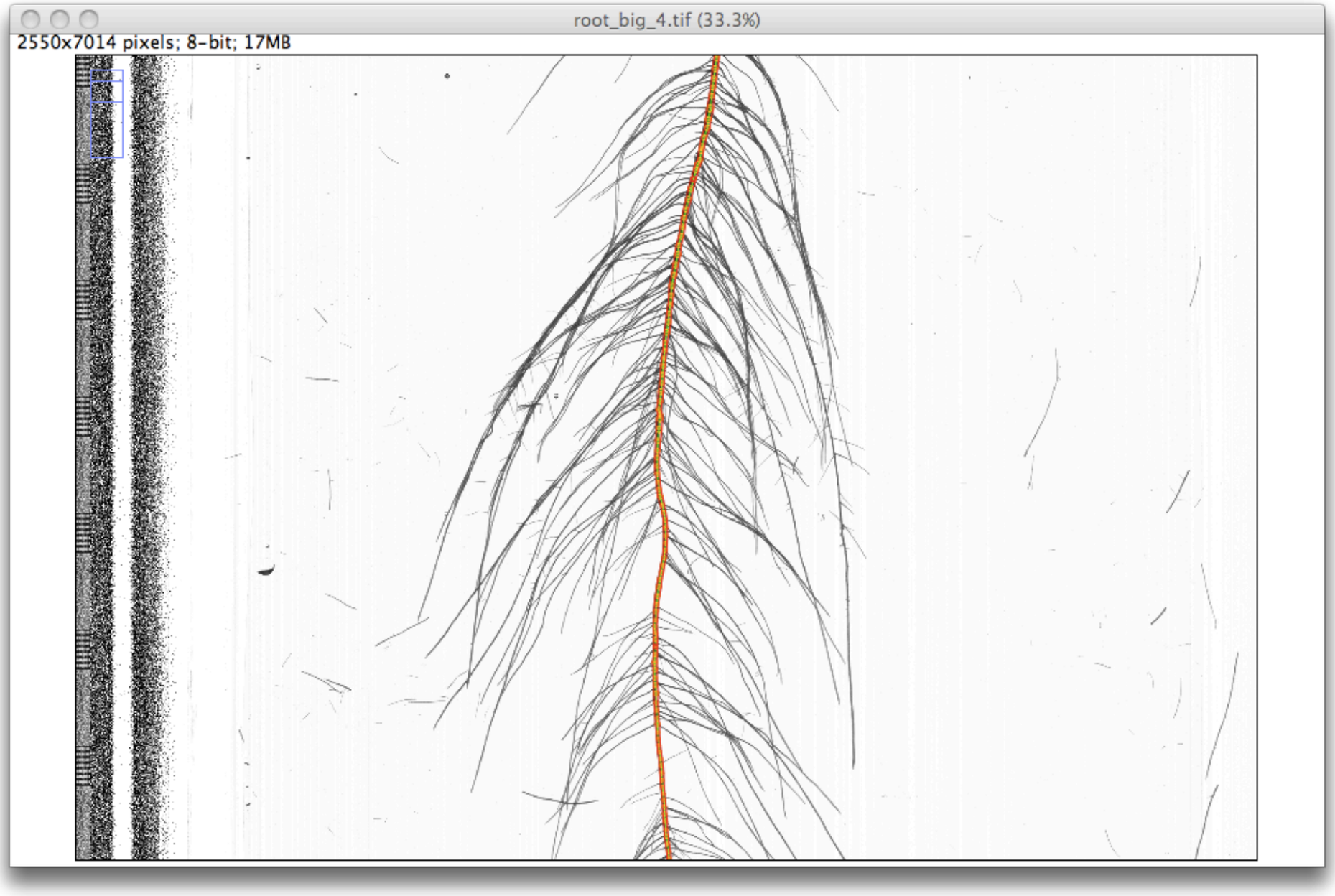
Semi-automated root drawing

With real roots?



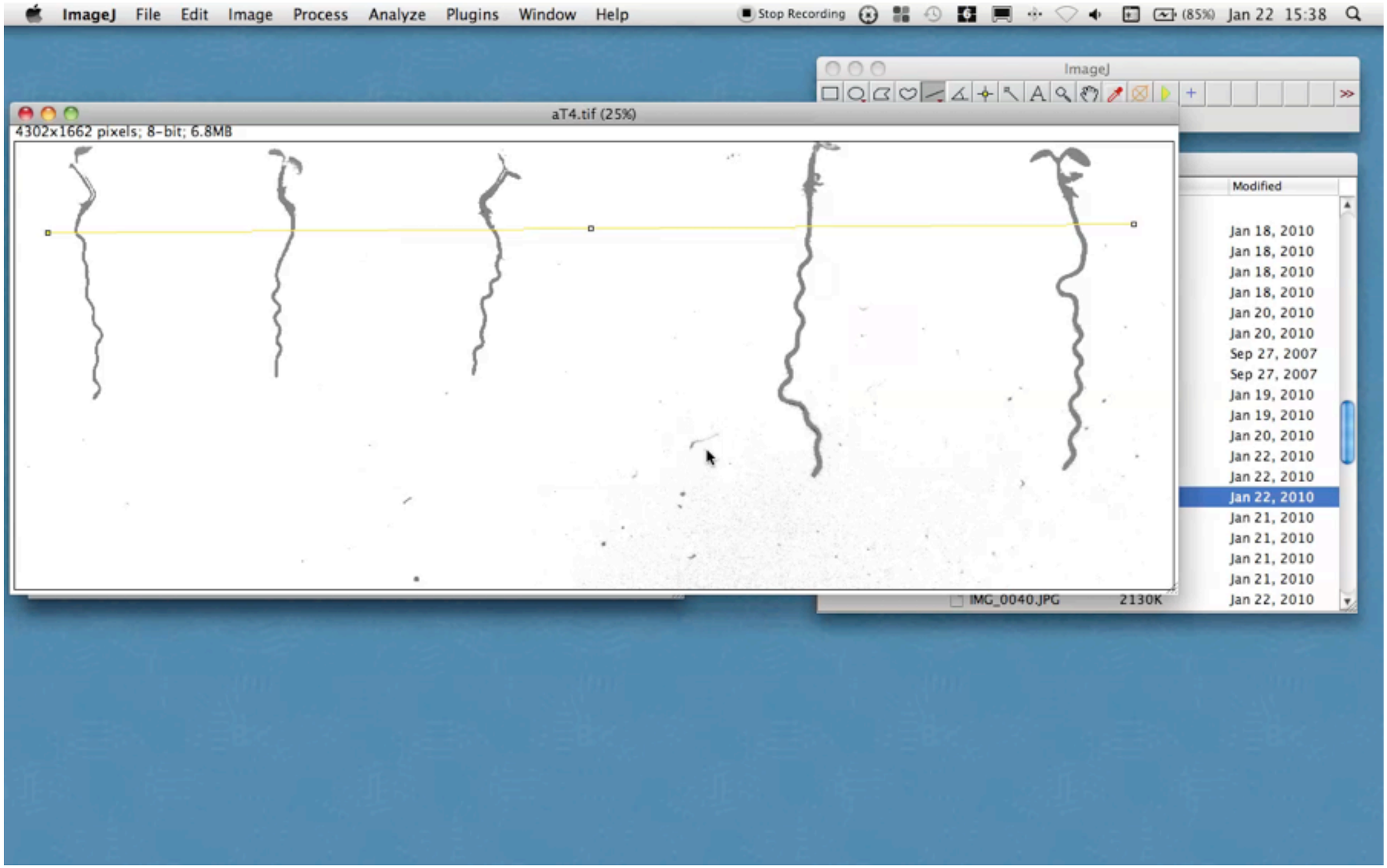
Semi-automated root drawing

With real roots?

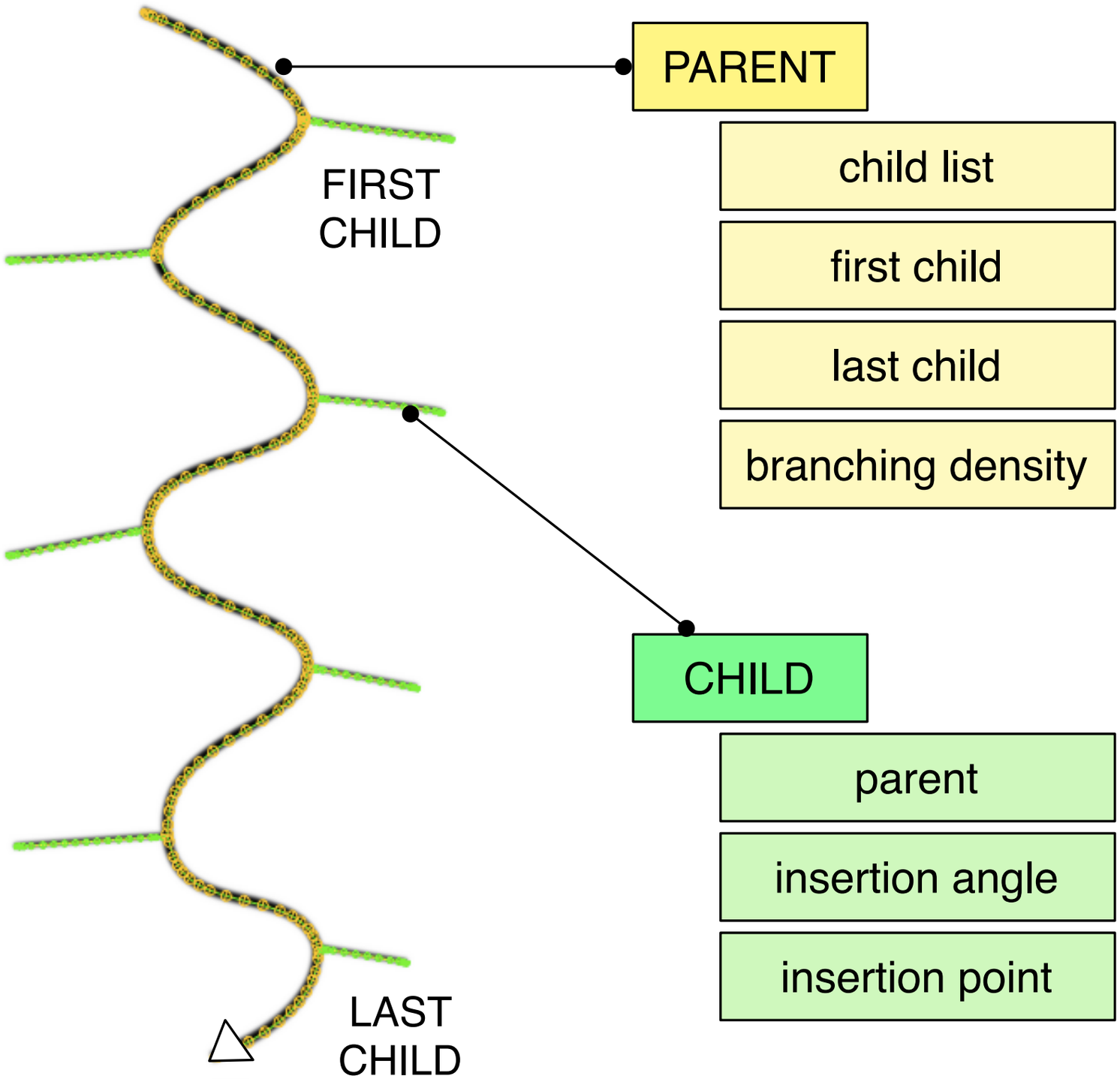


Automated drawing initiation

Automated drawing initiation

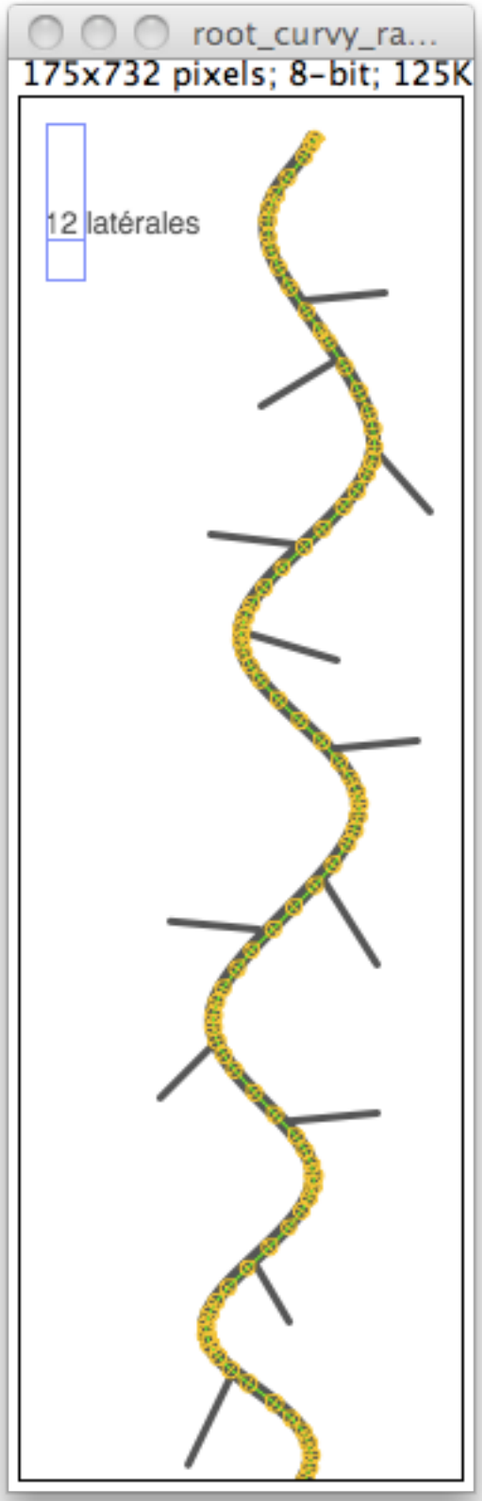


Topological information

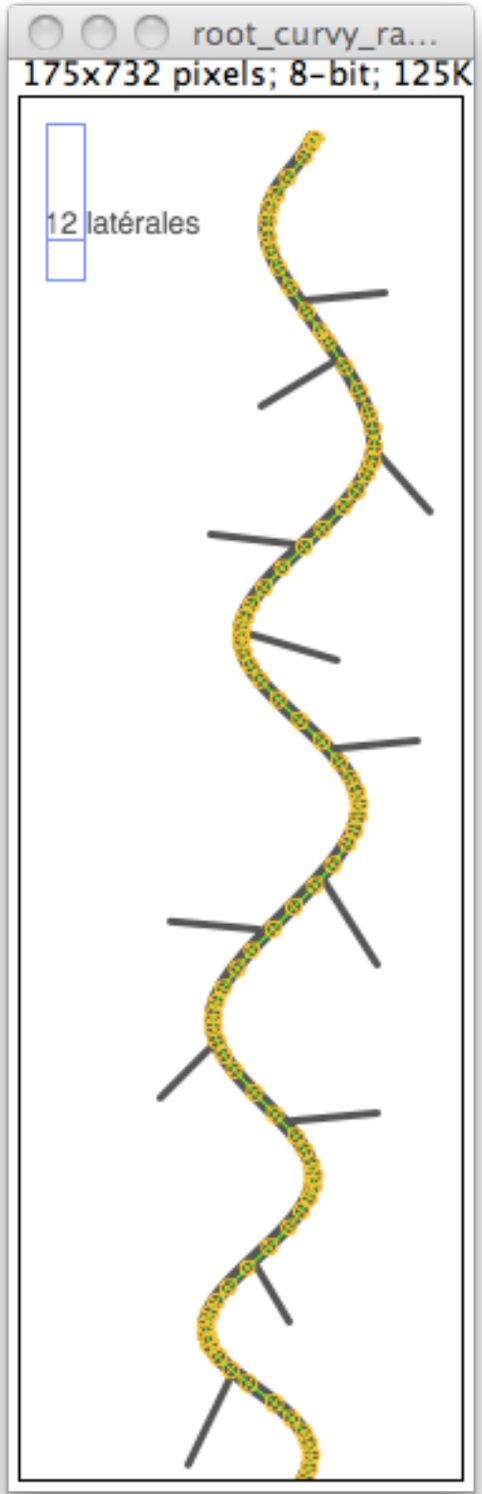


Topology
=
architecture
+
connections

Automated lateral detection (I)



Automated lateral detection (I)

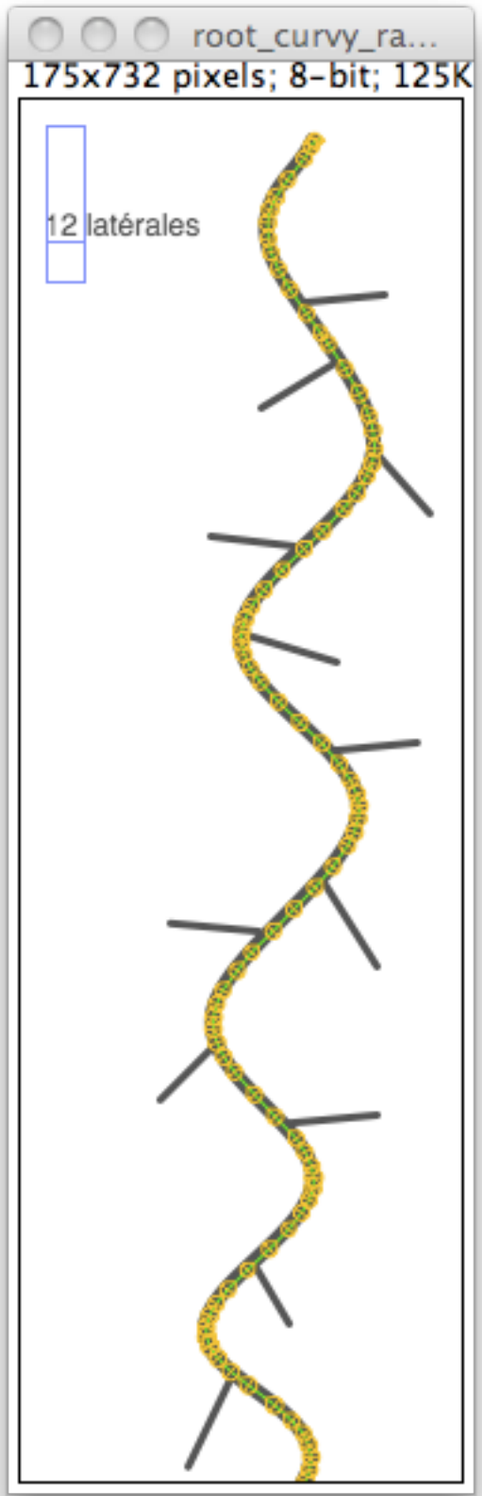


"Find laterals"
function

(1)
search for laterals
along the root

(2)
automatically
trace them

Automated lateral detection (I)



"Find laterals" function

(1)
search for laterals
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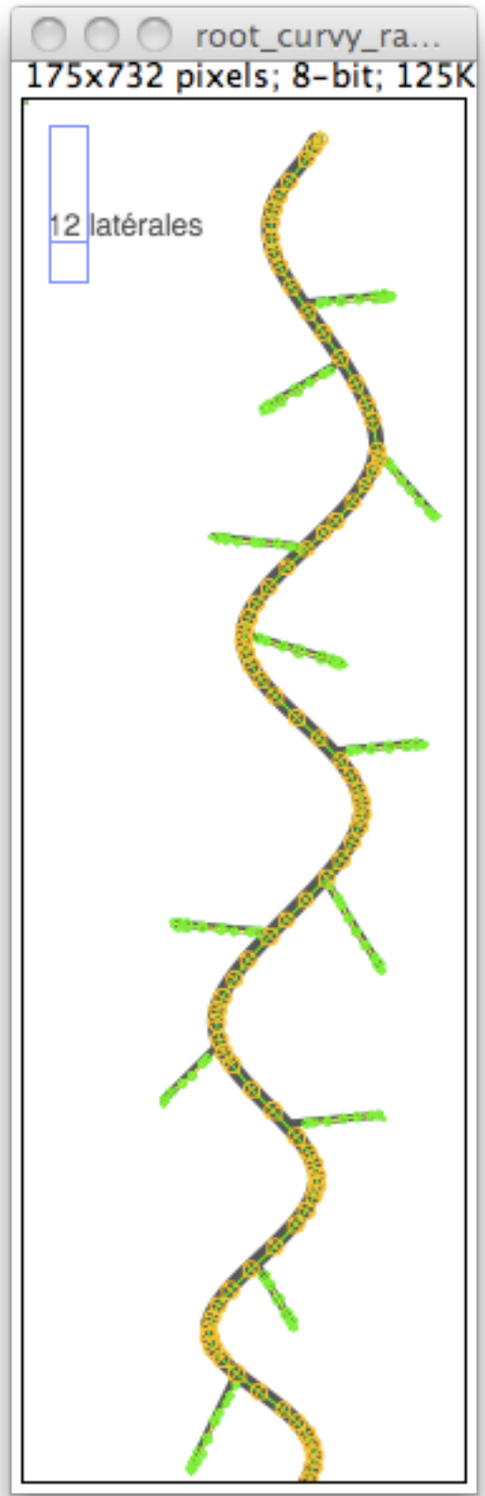
trace them



Automatic lateral detection (II)

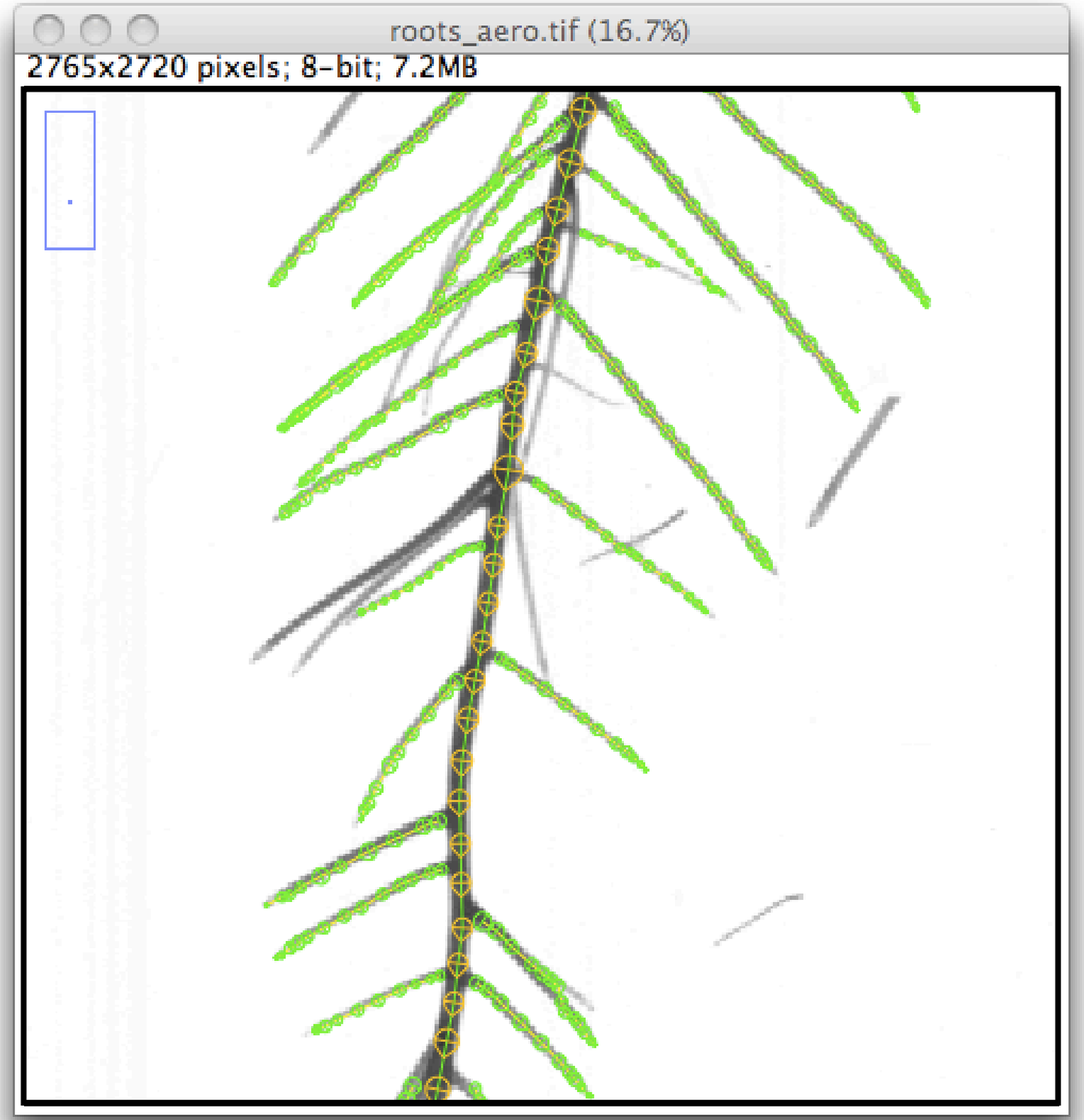
With real roots?

Automatic lateral detection (II)

With real roots?

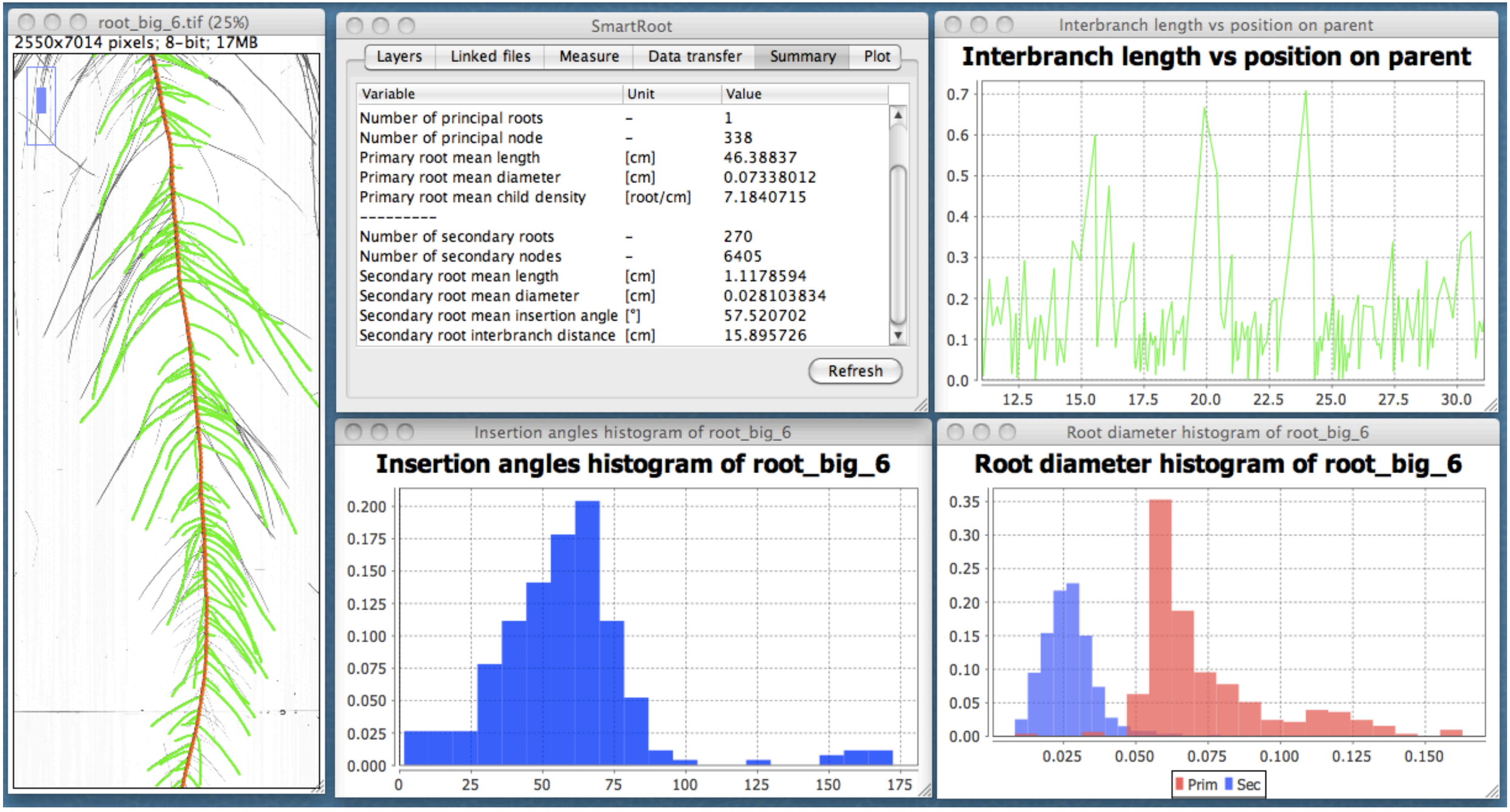
Automatic lateral detection (II)

With real roots?



New tools

Derived from topology



Key features

- Semi-automated root drawing
- Automated drawing initiation
- Automated drawing of lateral roots
- Topology
- New visualization tools

Acknowledgments

Thank you for you attention.