

New Project

Predicting Hardwood Quality

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Needs: 6-10-13-26-29

Today's tree grading systems

- Link current tree grades with product recovery (ON/QC)
- Link New Brunswick's tree grades to user needs
- Improve the ABCD (Québec) tree grading system to better assess product potential in small « D » trees (< 24 cm)

Future tree grading systems?

- Evolutionary flexible tree quality grading system (NB) (linked to market needs)

Needs

- Is there a need to speak a common language regarding tree classification in eastern Canada?
- If yes, we need to identify which **external tree attributes** have the best predictive power for product recovery (volume, quality, value) across Eastern Canada
- And we need to extract external tree information in a cost-efficient manner



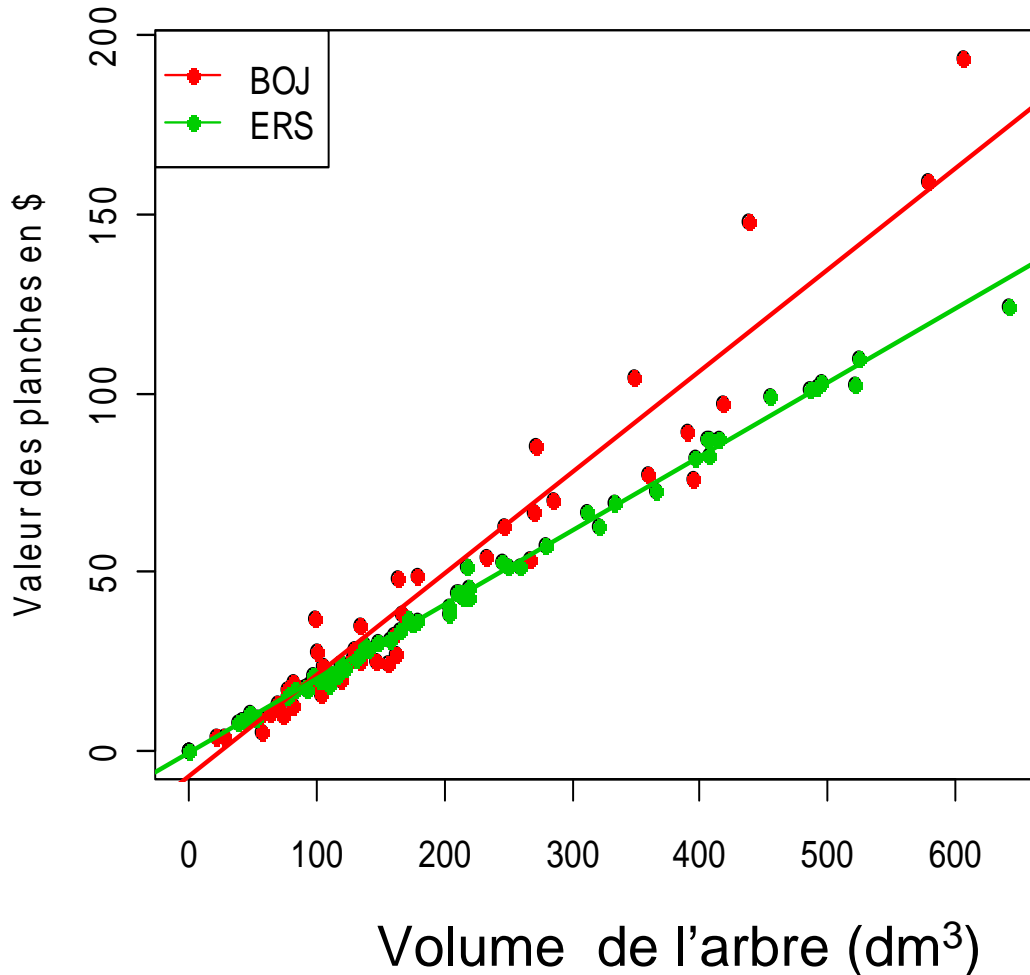
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Approach

- Continue hardwood product recovery analyses and model development and **integrate models into forest management tools (operational economic analysis)**
- Expand analysis of Jean McDonald at the tree level: i.e **better match trees to the best secondary manufacturing sector**

DBH is crucial for predicting lumber value per tree

Valeur des planches par arbre (\$)



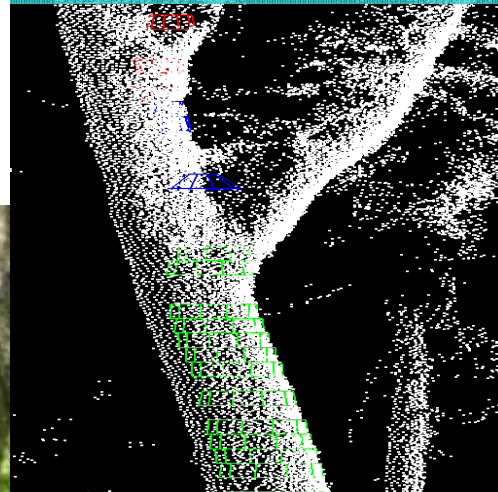
Modèle :

Lumber value per tree = tree volume +
species + volume*species

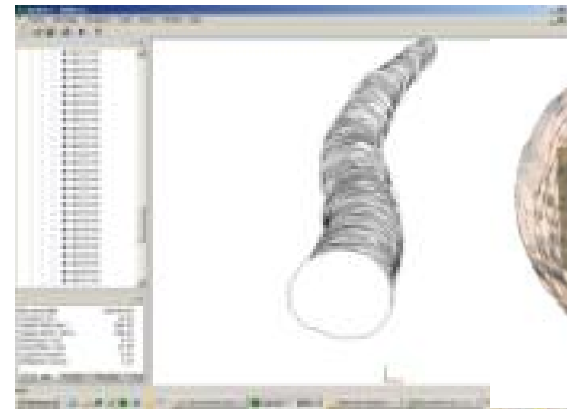
$R^2 = 0.961$, p-value: $< 2.2e-16$

SIMULATION APPROACH: Further integrate LiDAR information with Optitek/FPIInterface/Biolley...

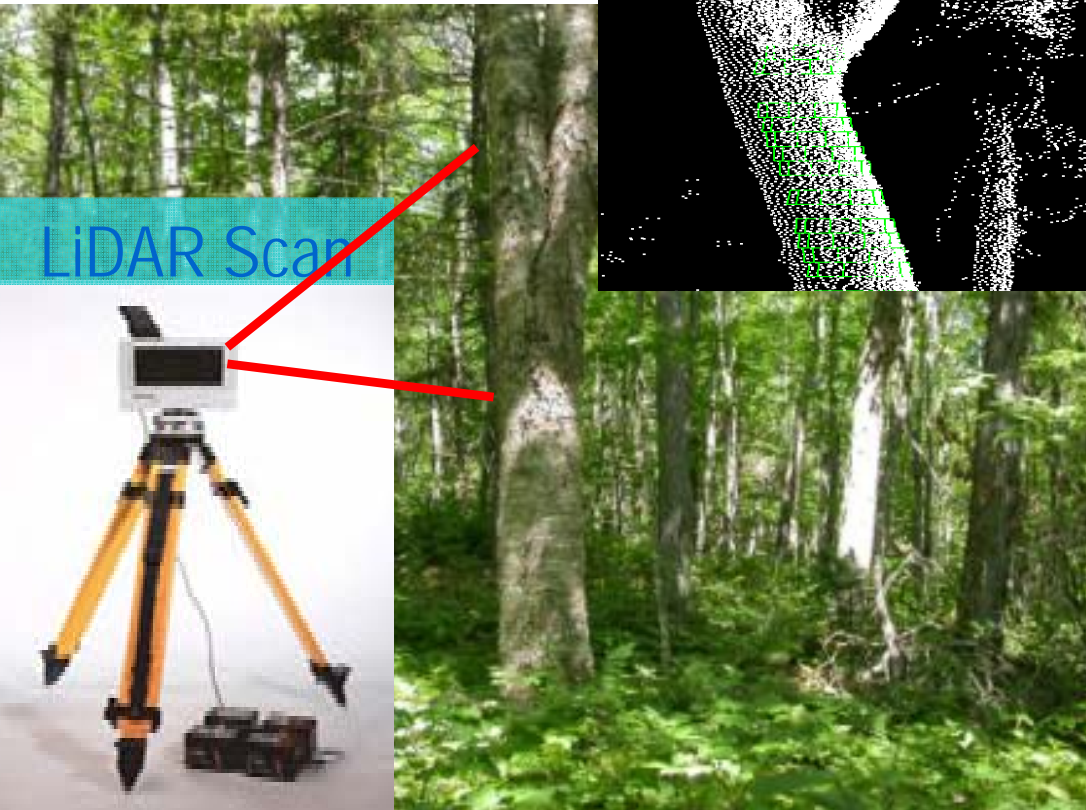
LiDAR output
(point clouds)



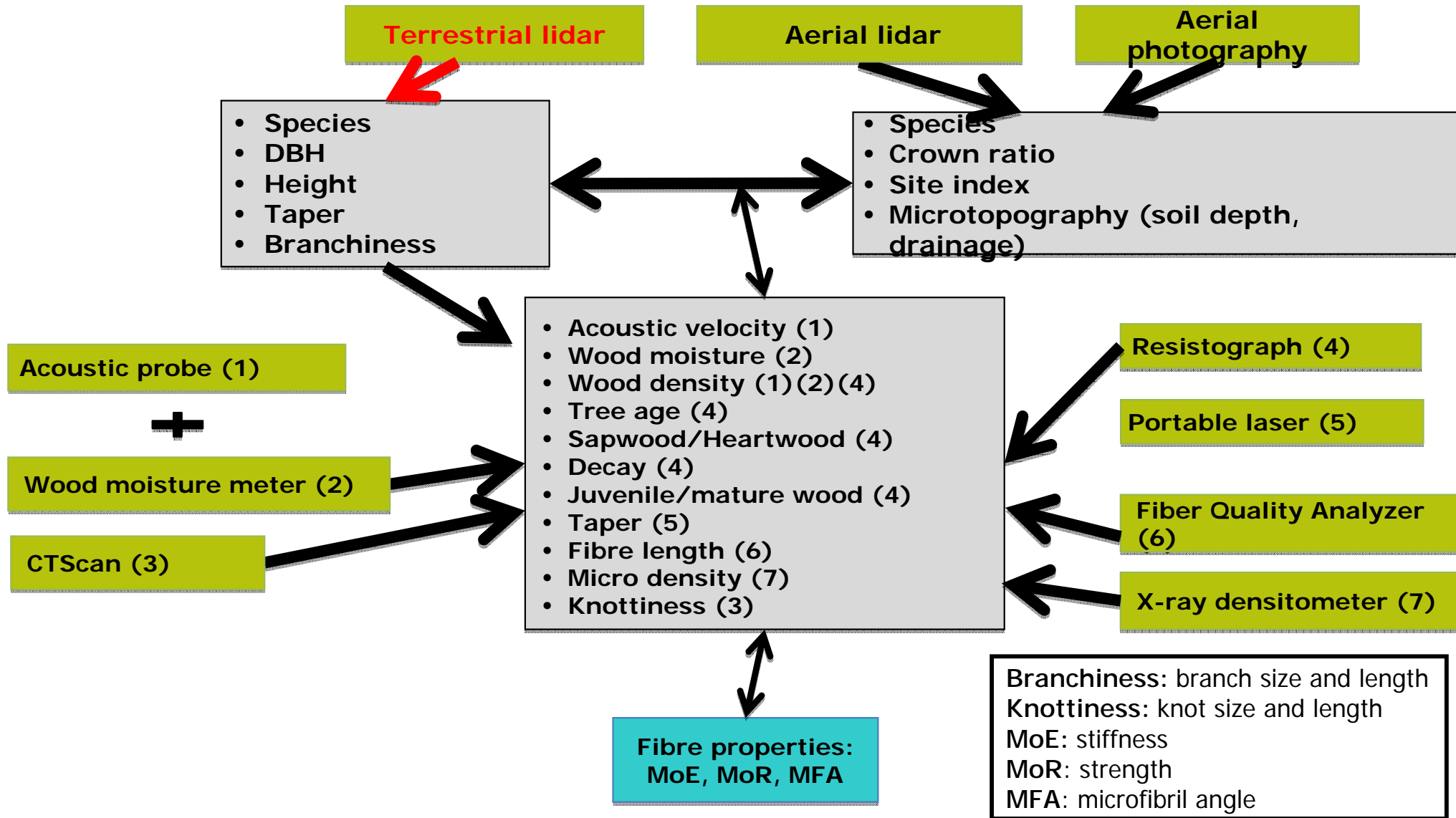
Optitek input – Estimation
of product value from
hardwood stands



LiDAR Scan



Continue correlation analysis between external tree attributes, product recovery and internal wood quality



Benefits

- **Simulation approach is expected to increase agility through a more rapid assessment of forest value (holistic approach)**

(integration LiDAR/Optitek/matrix/models/FPInterface/Biolley etc.)

No competition