



# FEASIBILITY OF GREEN WOOD CUTTING USING ASSISTED PEELING BY INFRARED RADIATION (IR)

Anna Dupleix

## ► To cite this version:

Anna Dupleix. FEASIBILITY OF GREEN WOOD CUTTING USING ASSISTED PEELING BY INFRARED RADIATION (IR). 4th Joensuu Forestry Networking Week, May 2012, Joensuu, Finland. hal-02100758

**HAL Id: hal-02100758**

**<https://hal.science/hal-02100758>**

Submitted on 16 Apr 2019

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



# FEASIBILITY OF GREEN WOOD CUTTING USING ASSISTED PEELING BY INFRARED RADIATION (IR)



JOENSUU FORESTRY  
NETWORKING WEEK



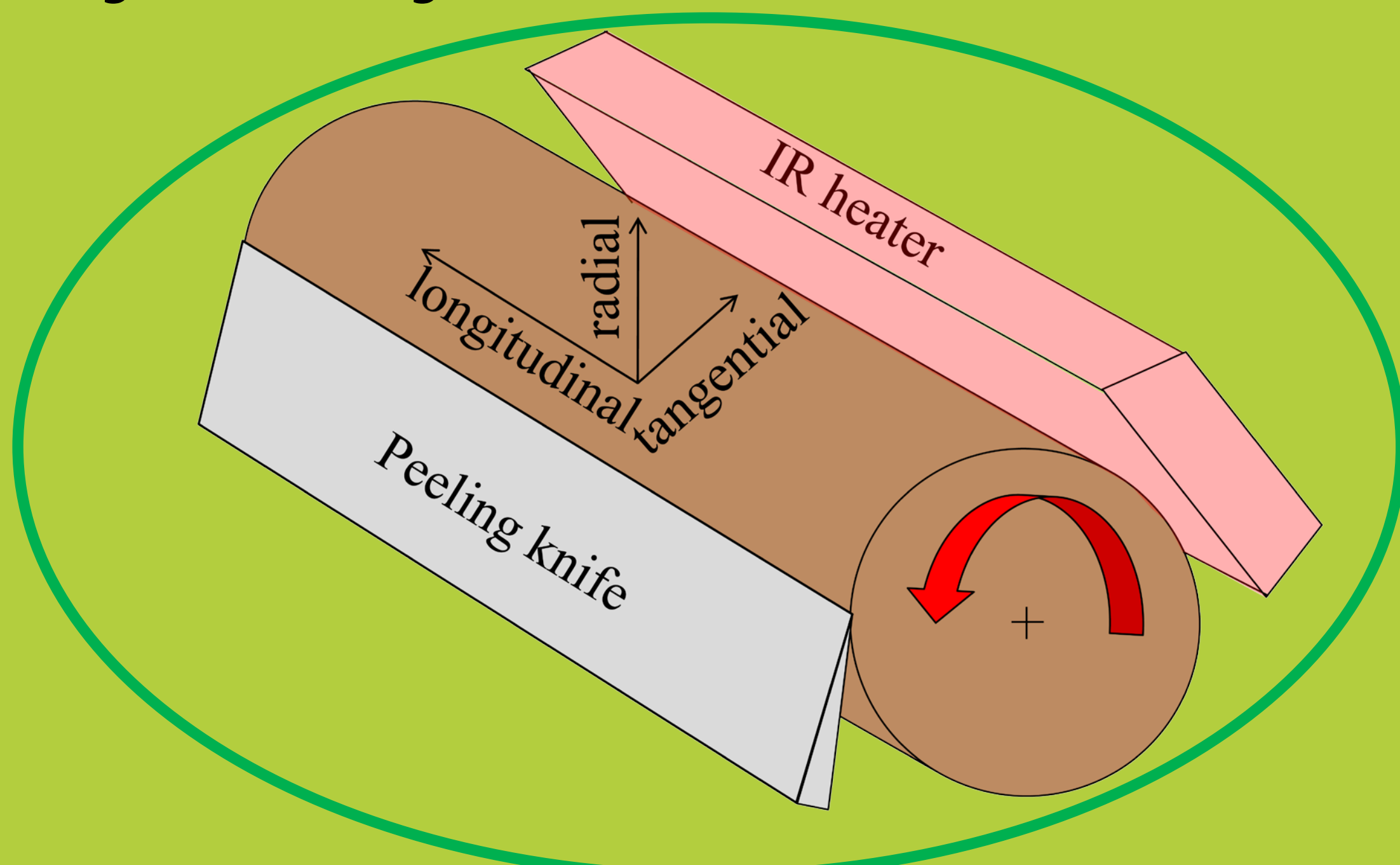
**Anna Dupleix**  
Aalto University, Finland  
Arts et Métiers ParisTech, France  
anna.dupleix@aalto.fi

Avoiding  
soaking



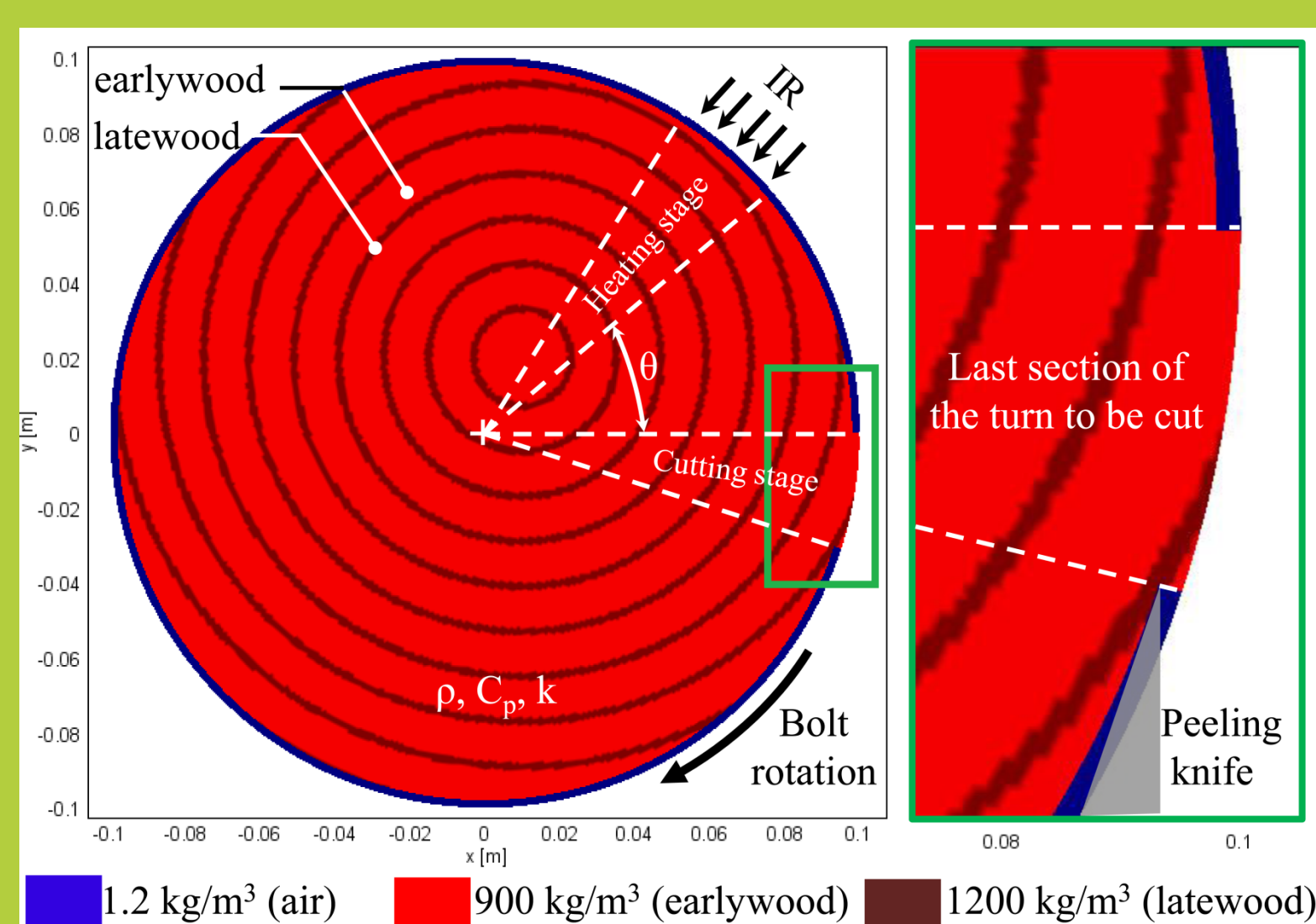
## Introduction

Peeling process requires the prior heating of round green-wood at temperatures ranging from 50 to 90 °C. This treatment is necessary to increase wood deformability, to lighten lathe checking into veneers and to reduce cutting forces. It is usually done by immersion into hot water. However it presents many disadvantages among which duration of treatment (12 to 72 hours), washing out of polyphenolic extractibles inducing water pollution and affecting wood natural durability, increasing bolt end splitting threatening bolt cohesion.

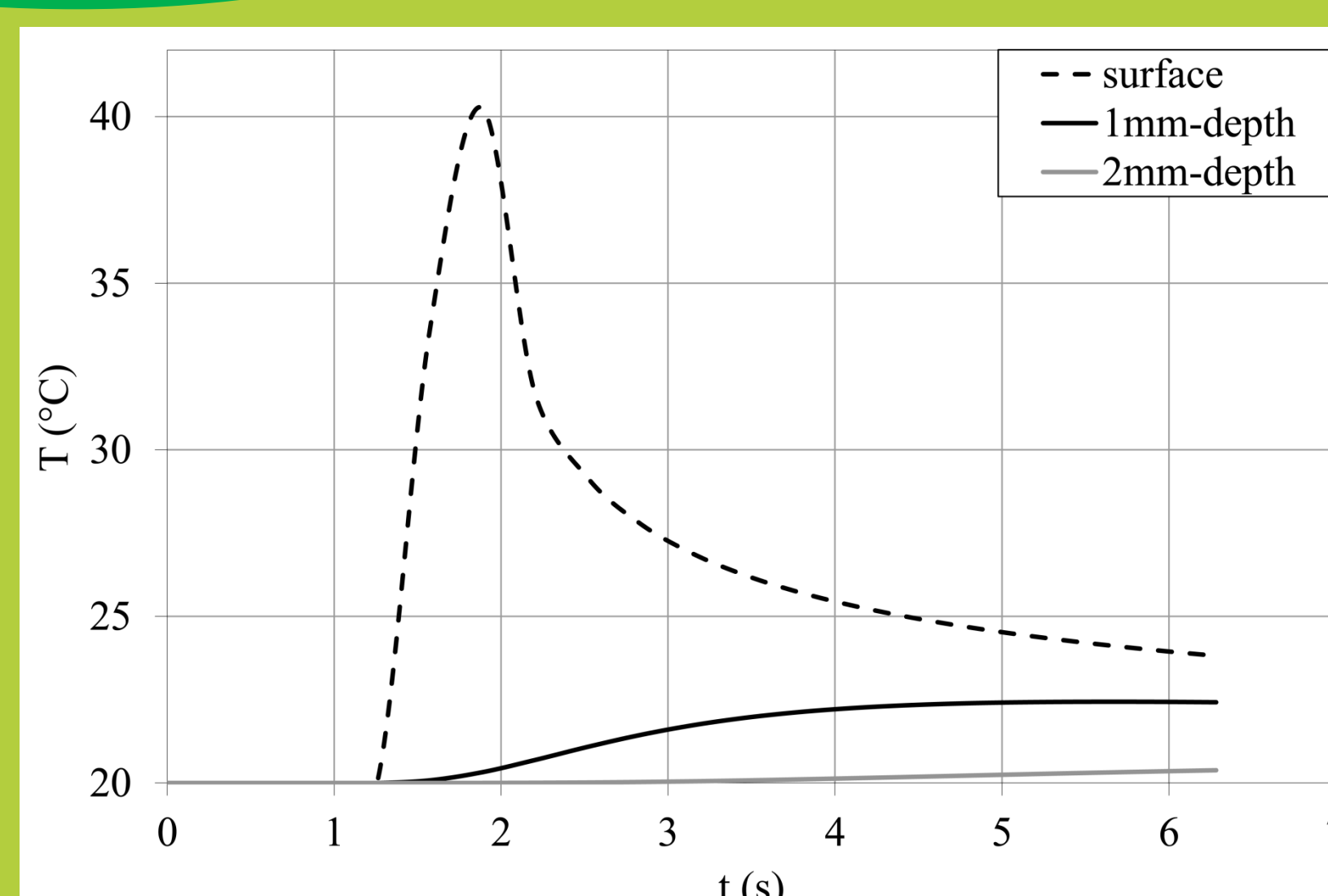


## Studying IR heating of green wood

The goal of this PhD thesis is to develop a heating system embedded on the peeling lathe to circumvent many of these disadvantages. The infrared (IR) technology is the most promising solution because of the power it offers and the easiness of integration on the machine. This new technology using radiant energy to heat green-wood prior to peeling would be a major innovation for the industries involved in the production of plywood, LVL, etc.



Modelling IR heat transfer



Results from modelling