





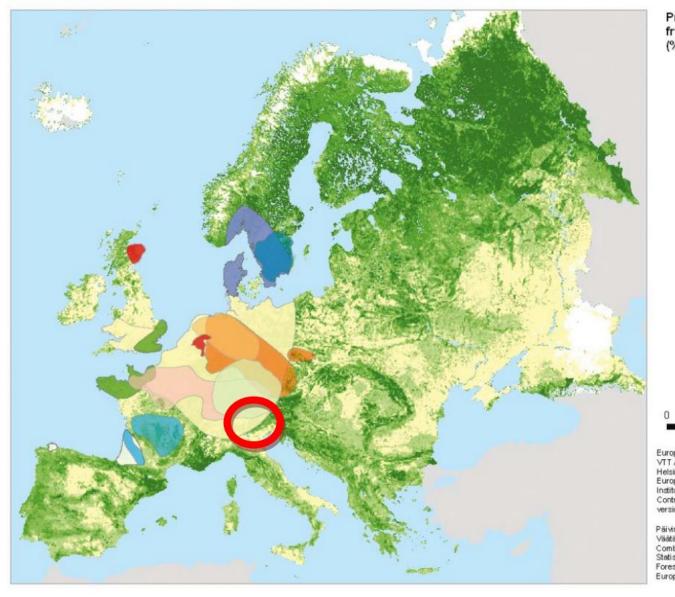
Trees susceptibility to wind damages: the effect of slope

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Introduction









European Forest Institute, University of Joensuu, VTT Automation in association with University of Helsinki and Stora Enso Forest Consulting, European Commission Joint Research Centre / Institute for Environment and Sustainability Contract number: 17223-2000-12 F1SC ISP FI version August 2002, corrections August 2006

Päivinen, R., Lehikoinen, M., Schuck, A., Häme, T., Väätäinen, S., Kennedy, P. and Folving, S. 2001. Combining Earth Observation Data and Forest Statistics. EFI Research Report 14. European Forest Institute and Joint Research Centre -European Commission. ISBN 952-9844-84-0.

Wind

One of the main natural disturbances in European forests

Case study

Storm «Vaia» 27-30 October 2018

First severe windstorm event in the southern Alps

Introduction

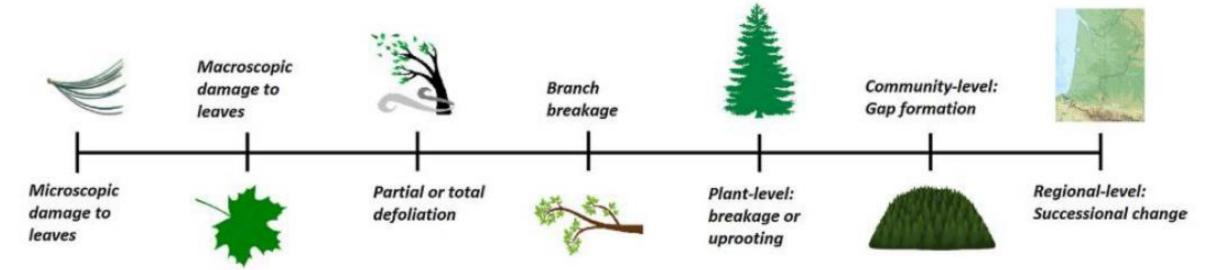


Illustration by Tommaso Locatelli (Gardiner et al. 2016)



Field campaign: pulling tests





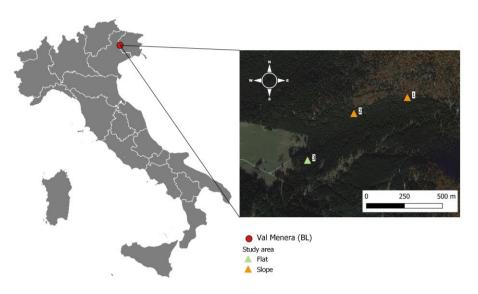




Ph: Matteo de Mayda

Site = Cansiglio forest, Valmenera (BL)

- 27 trees felled during tests in 2018
- 13 trees felled during tests in 2020
- 6 trees felled during tests in 2021
- Average slope (2020 tests): 20°



Marchi et al. (sub)





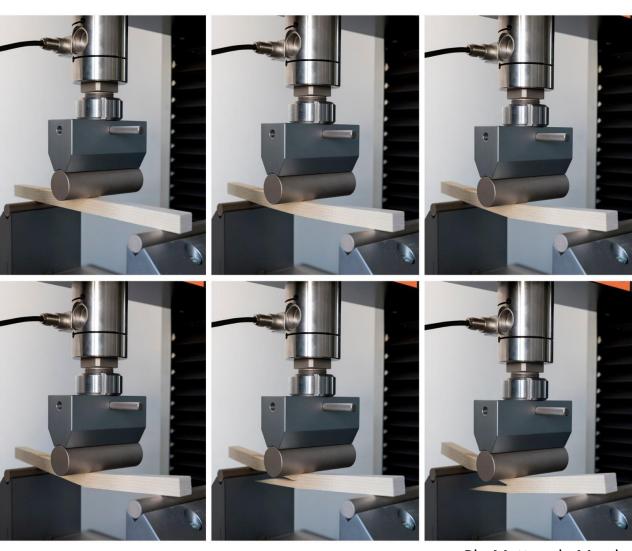




Lab tests: MOE/MOR analysis

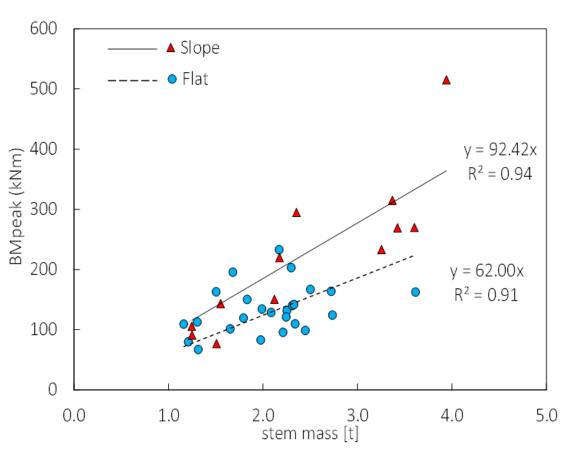




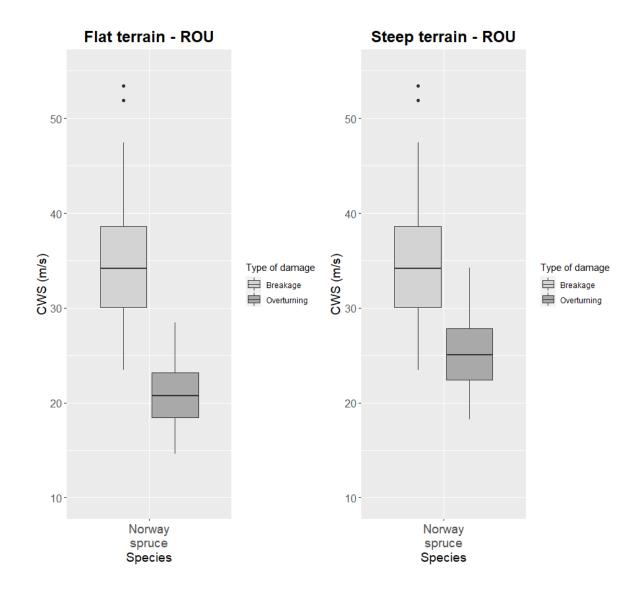


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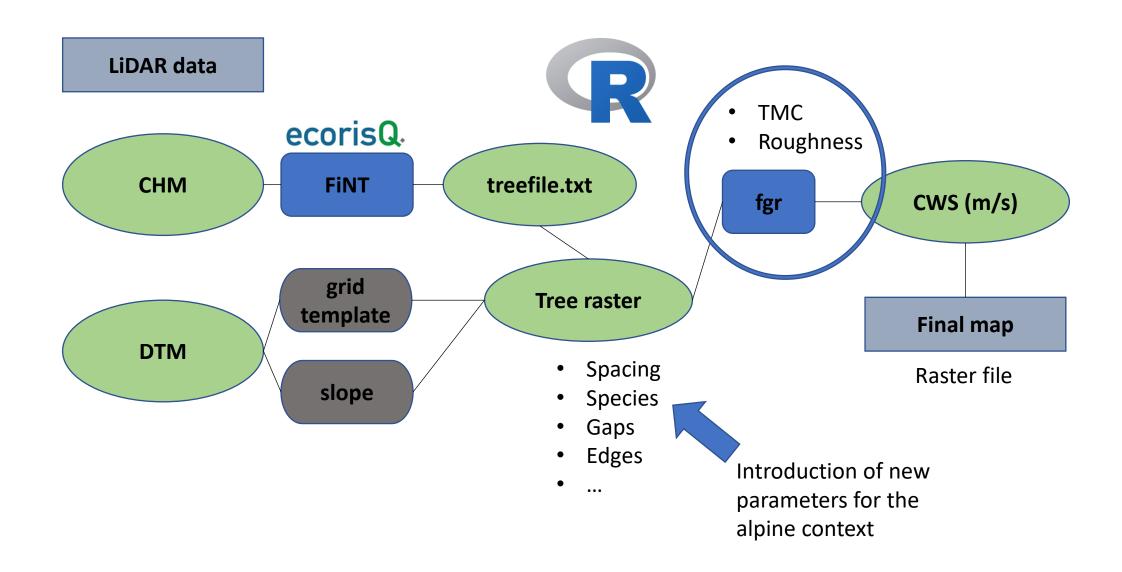
Results: slope vs flat



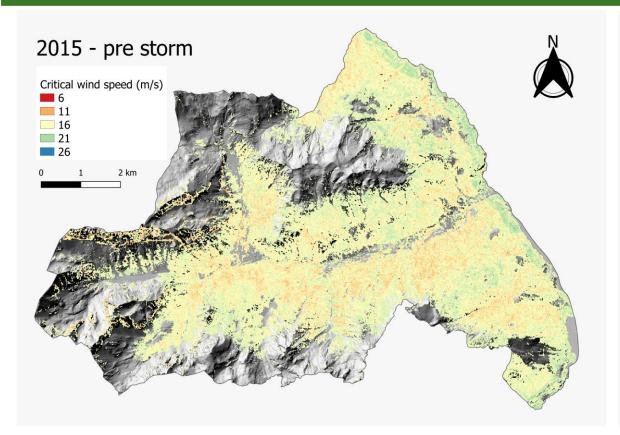
Marchi et al. (sub)

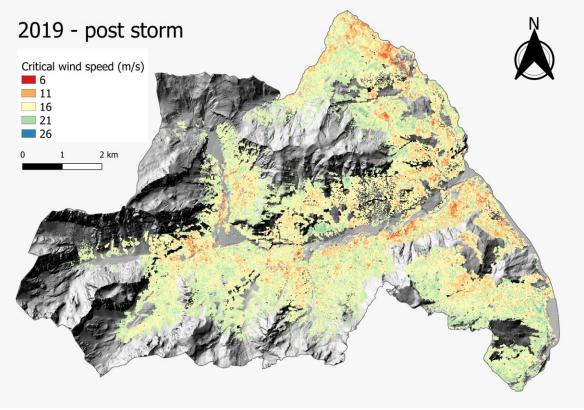


Wind risk mapping



Mapping susceptibility in different scenarios





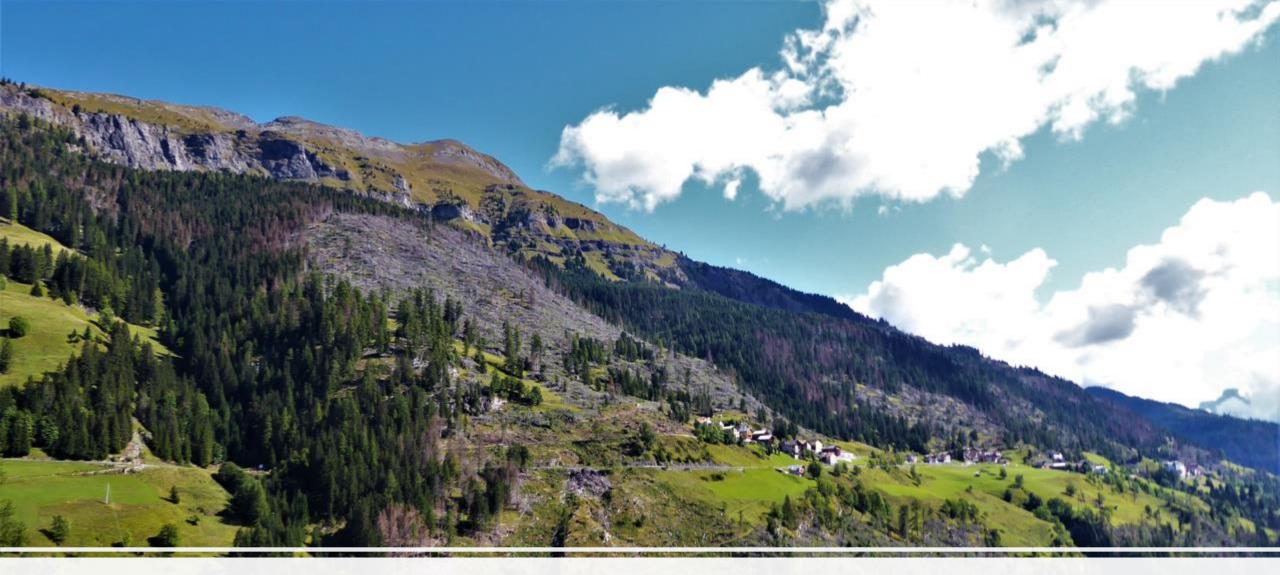
Conclusions

Calibration of fgr model resulted successful for the alpine context

Next step: Evaluation of the performance of the model, introducing other variables

(e.g. exposition to wind)

(Costa et al., in preparation)



Thanks for your attention!