Abstract template for the conference "A century of national forest inventories – informing past, present and future decisions"

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On page two, you are asked to fill in your abstract in the format and font size indicated. Please remember to include authors affiliation information in the footer section of page two. The length of the abstract may not be more than one page including references.

Abstract title:		Harmonisation of NFI information to characterize the vertical structure of forest fuels at the European scale
Take-home message:		*The information from stands vertical structure is crucial to characterize the fuel models at the European scale. Due to the difficulties of comparisons between countries and taking advantage of the available data from the National Forest Inventories, a harmonisation methodology to characterize vertical structure to use in forest fuels models is proposed and the results of this process is presented for both Portugal and Spain.*
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General topic, see website: (please double click on the check box and activate the relevant one)	☐	Improving future NFIs by learning from the past
	☒	NFIs today and in the future
	☐	Cutting edge and futuristic inventory techniques and technologies
Preferred presentation form:	☐	Oral presentation
	☒	Poster
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Harmonisation of NFI information to characterize the vertical structure of forest fuels at the European scale

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Introduction: Current fuel models require information on several stand structure variables, in particular the ones that measure vertical structure and can be retrieved from National Forest Inventories (NFIs). However, information about vertical structure of forests is often collected in a non-harmonised way across the European countries which compromises the comparability and reinforce the need to develop harmonised methodologies for assessing fuel loads in the vertical strata. In this study we present an approach based on National Forest Inventory (NFI) data to harmonise the characterization of the vertical structure of forest fuels, both canopies and understory, at the European scale.

Materials and methods: From the available NFI data we created a common legend of tree, shrub and herbaceous species, where some were associated taking into account their physical and ecological characteristics. We computed cover percentage of those species by height classes. The threshold for each height class was similar to those used in other ecological studies. We tested this harmonisation approach for the Iberian Peninsula using data from the NFI of Portugal and Spain in similar periods.

Results: For the Iberian Peninsula tree species where grouped in 16 classes and shrubs and herbaceous species were grouped in 14 formations. The harmonised vertical structure, using the available NFI information, was established taking into account the percentage of cover by species with a total of 7 height classes: class 1: > 16 m; class 2: [8 - 16 m[; class 3: [4 - 8 m[; class 4: [2 - 4 m[; class 5: [1 - 2 m[; class 6: [0.5 - 1 m[; class 7: <0.5 m.

Conclusion: This harmonised information can be applied to analyse the influence of forest vertical structure on the fire probability of stands and also to establish vegetation/fuel models, assisting and improving forest management with the variables from NFIs. Also, we proposed further developments, namely the definition of the NFI stand variables of interest to be used as inputs in fire behaviour models, and the definition of other tree and stand variables that must be combined with NFI data to estimate fire behaviour. All of these methods may be used in any national or regional forest inventories in Europe and also on cross-border areas with potential applications in wildfire fighting and prevention.

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