



Dendroecological opportunities to shift and cross disciplinary boundaries

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In this 'solicited' talk, I will firstly navigate through some of the most influential dendroecological/-climatological advancements of roughly the last decade. Afterwards, I will outline pending challenges in modern tree-ring research, including the ongoing involvement of (quantitative) wood anatomical materials, methods and perspectives. Finally, I will provide several examples of how dendroecological approaches might indeed be able to contribute towards identifying and shifting research frontiers, as well as crossing disciplinary boundaries; not only within the vast field of natural sciences but also with the humanities. While presenting an array of timely case studies, with all of them being centered on either tree-ring data or associated techniques, this talk will comprise multiple aspects of archaeology, astronomy, biology, ecology, epidemiology, history, mycology and volcanology. In so doing, I hope to stimulate discussion on the potential and limitations of state-of-the-art tree-ring research across various spatiotemporal scales of resolution, which may range from the cell to the hemisphere and from the day to the Holocene. Despite its overview character, this talk will place emphases on utilizing big datasets, on valuing Russia's scientific landscape, on performing high-resolution radiocarbon measurements, and on linking volcanic activity, climate variability and human history.