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'PPEES Special Issue "High Elevation Ecosystems"

Essay review

The 90 ways to describe plant temperature

Running head: The apt and inept temperatures for plants

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Highlights:

• Air temperature is an unsuitable proxy for life conditions of alpine plants.

• The distinction between temperature means and extremes is key.

• There is an urgent need to explain species range limits and plant phenology strategies.

Abstract

What seems like a trivial task is one of the most difficult ones in functional plant ecology and

biogeography: selecting the appropriate measures of temperature for an ecologically

meaningful description of habitat conditions and for a mechanistic understanding of responses

of plants. The difficulty becomes even more severe at elevations above the climatic tree limit,

where plant stature, topography and seasonal snow cover interact in producing temperature

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