

Winds of Change

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Forest, a reservoir for biodiversity, plays a significant role in global biosphere and biogeochemical cycle are at risk due to unaccounted anthropogenic actions and changing climate. Natural disturbances such as windstorm are being altered mostly due to changing wind climate and topography, causing severe damage to forest structure and dynamics. With an increased silvicultural practice like partial cuttings or new edges, windthrow hazard will potentially concern in near future. However, an understanding on the mechanics of wind load, speed, patterns, etc. on mortality in different stand composition remains inadequate. A comprehensive knowledge on forest risk modelling is necessary to anticipate how this varying wind circulation pattern will be affecting future global forest cover, diversity, structure and function. An integration of wind-induced mortality into the land-surface model (LSM) framework, improving representation of disturbance processes and their implications for carbon-climate feedback is extremely required. Developing the wind-risk module to represent forest mortality into LSM's should be encouraged. Hence, the mechanistic understanding of the dynamic vegetation framework will bring realistic predictions of compromised carbon sinks under future climatic scenarios.