**Supplement of**

**Simulating damage for wind storms in the land surface model ORCHIDEE-CAN (revision 4262)**

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Figure S1. Illustration of inner and outer area generated by gaps within a forest area.

\[ A_{\text{inner}} = \frac{1}{4} \cdot \left( \left( A_{\text{gap}}^{\frac{3}{2}} + 2 \cdot 9h \right)^2 - A_{\text{gap}} \right) \cdot \left( \frac{A_5}{A_{\text{gap}}} \right) \]
Figure S2. Illustration of selected points in the les lands forest.
Figure S3. The effect of different temporal aggregation period, an increasing in m index for a 30 minutes extension, on the wind speed at selected Fluxnet forest sites. The red line in each sub-plot indicates of using a 6h aggregation period ($m = 12$, because $m = 1$ represents 30 minutes).