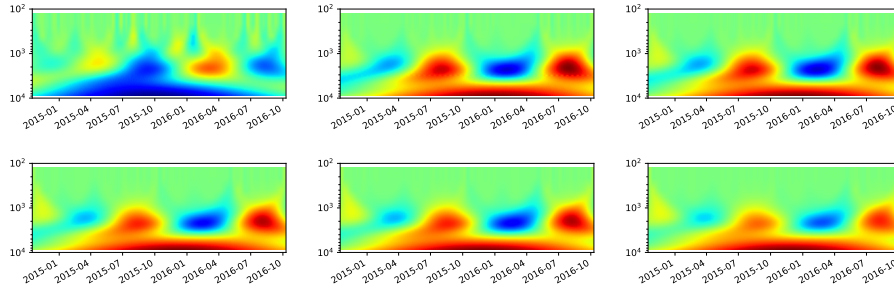**Supplement 1: CWT figures**

LTD

Figure S1. Top to bottom, left to right: Mexican hat wavelet coherence with 1) WTL data from the LTD plot; 2) soil temperature (soilT) at 5 cm depth; 3) soilT at 15 cm depth, 4) soilT at 25 cm depth; 5) soilT at 35 cm depth; 6) soilT at 45 cm depth.
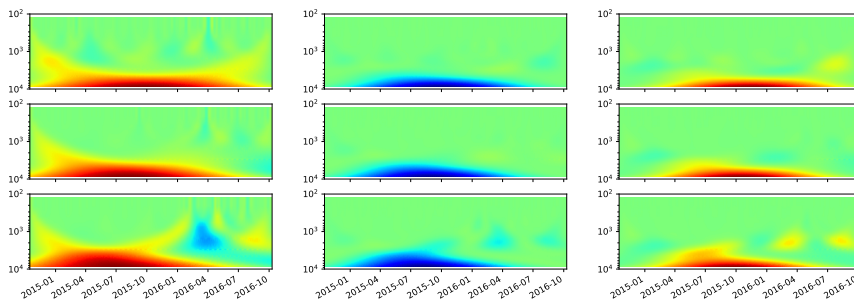

Figure S2. Left: Wavelet coherence between Mexican hat wave and E_h at LTD plot, 5 cm depth; center: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at LTD plot, 5 cm depth. 3 probes plotted separately.

Figure S3. Left: Wavelet coherence between Mexican hat wave and E_h at LTD plot, 15 cm depth; center: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at LTD plot, 15 cm depth. 3 probes plotted separately.
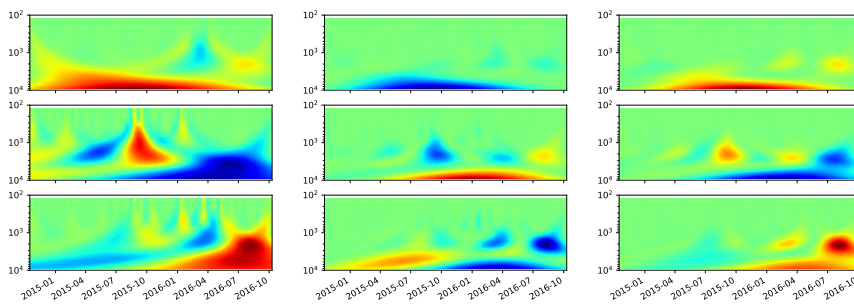
Figure S4. Left: Wavelet coherence between Mexican hat wave and E_h at LTD plot, 25 cm depth; center: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at LTD plot, 25 cm depth. 3 probes plotted separately.
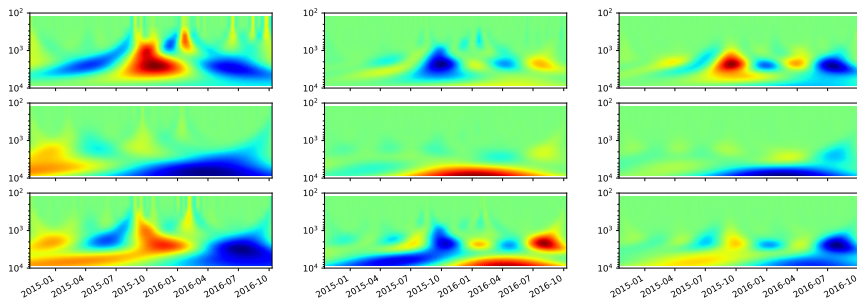

Figure S5. Left: Wavelet coherence between Mexican hat wave and E_h at LTD plot, 35 cm depth; center: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at LTD plot, 35 cm depth. 3 probes plotted separately.
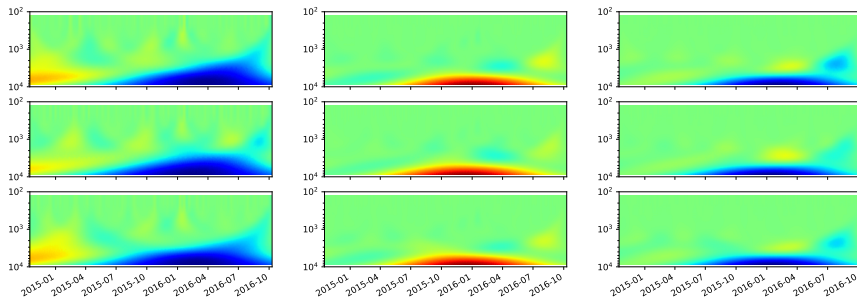

Figure S6. Left: Wavelet coherence between Mexican hat wave and E_h at LTD plot, 45 cm depth; center: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at LTD plot, 45 cm depth. 3 probes plotted separately.
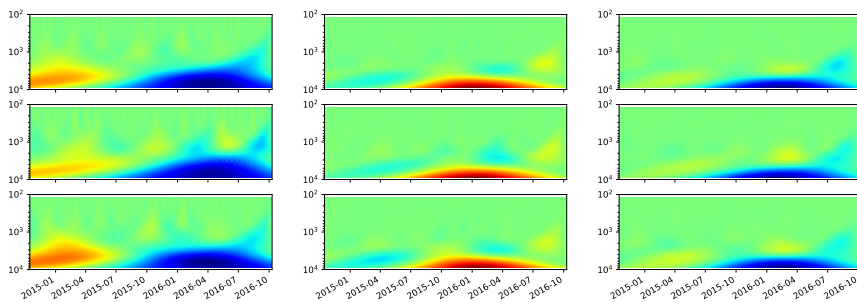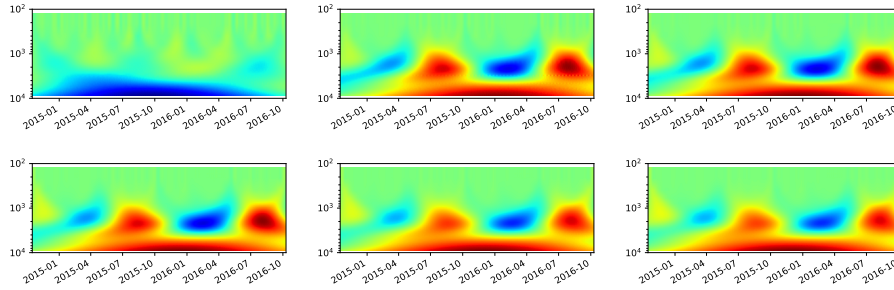
STD

Figure S7. Top to bottom, left to right: Mexican hat wavelet coherence with 1) WTL data from the STD plot; 2) soil temperature (soilT) at 5 cm depth; 3) soilT at 15 cm depth, 4) soilT at 25 cm depth; 5) soilT at 35 cm depth; 6) soilT at 45 cm depth.
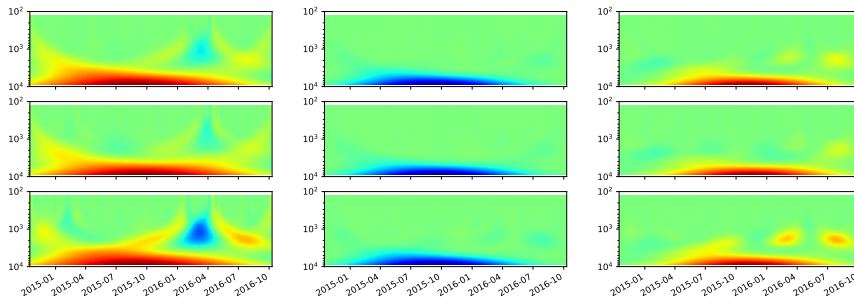

Figure S8. Left: Wavelet coherence between Mexican hat wave and E_h at the STD plot (5 cm depth); centre: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at the STD plot (5 cm depth). Three probes plotted separately.
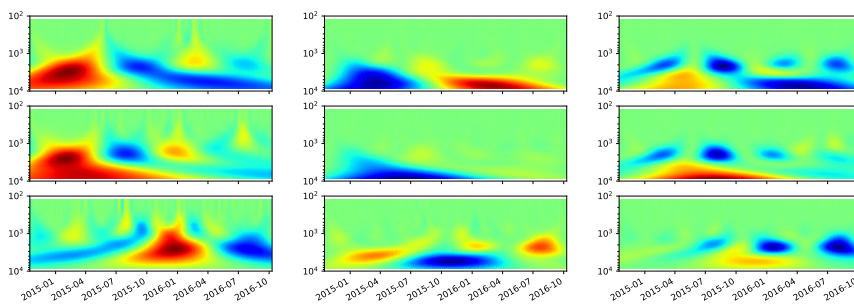

Figure S9. Left: Wavelet coherence between Mexican hat wave and E_h at STD plot, 15 cm depth; center: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at STD plot, 15 cm depth. 3 probes plotted separately.
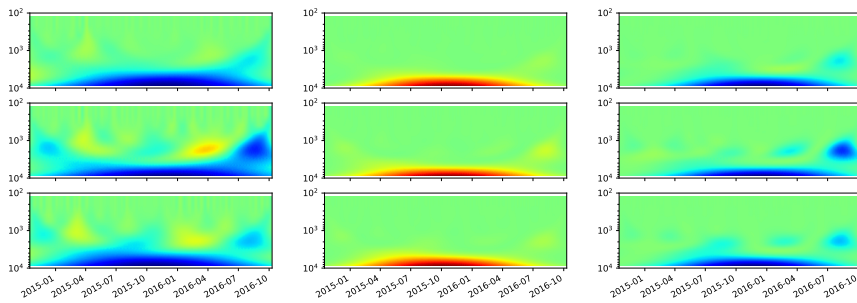
Figure S10. Left: Wavelet coherence between Mexican hat wave and E_h at the STD plot (25 cm depth); centre: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at the STD plot (25 cm depth). Three probes plotted separately.
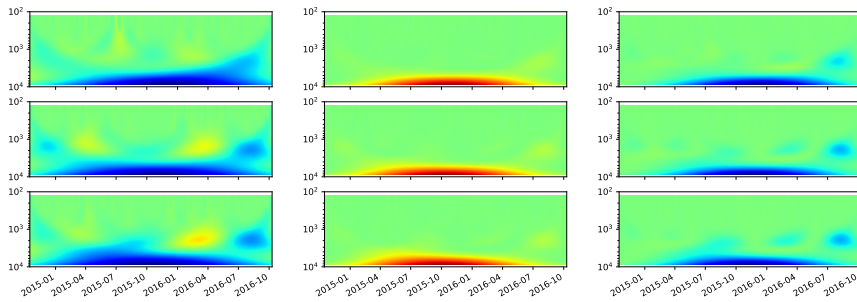

Figure S11. Left: Wavelet coherence between Mexican hat wave and E_h at STD plot, 35 cm depth; center: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at STD plot, 35 cm depth. 3 probes plotted separately.
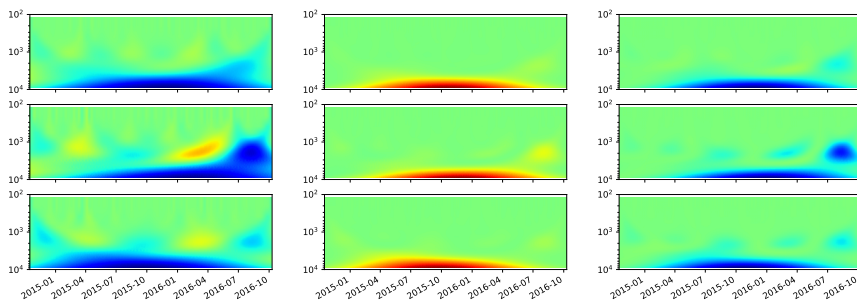

Figure S12. Left: Wavelet coherence between Mexican hat wave and E_h at the STD plot (45 cm depth); centre: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at the STD plot (45 cm depth). Three probes plotted separately.
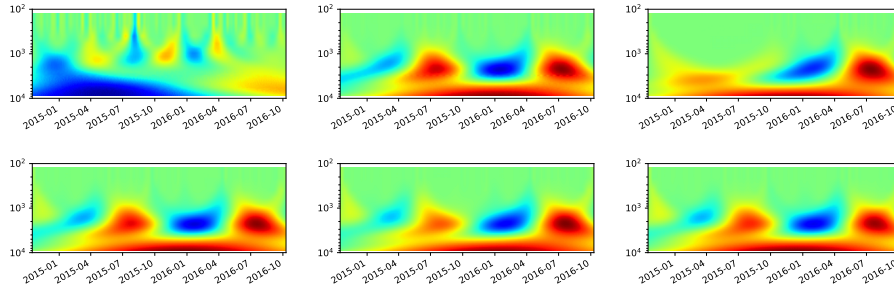
Figure S13. Top to bottom, left to right: Mexican hat wavelet coherence with 1) WTL data from the UD plot; 2) soil temperature (soilT) at 5 cm depth; 3) soilT at 15 cm depth, 4) soilT at 25 cm depth; 5) soilT at 35 cm depth; 6) soilT at 45 cm depth.
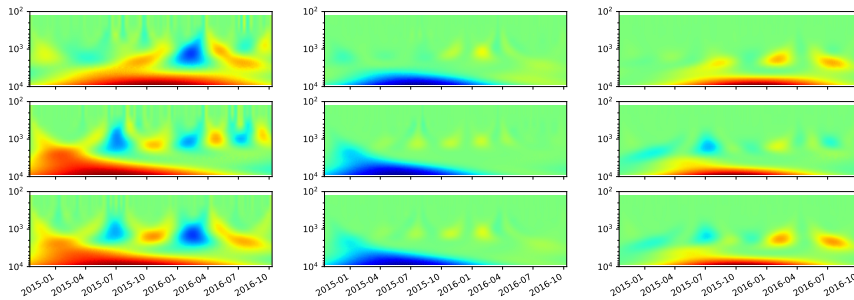

Figure S14. Left: Wavelet coherence between Mexican hat wave and E_h at the UD plot (5 cm depth); centre: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at the UD plot (5 cm depth). Three probes plotted separately.
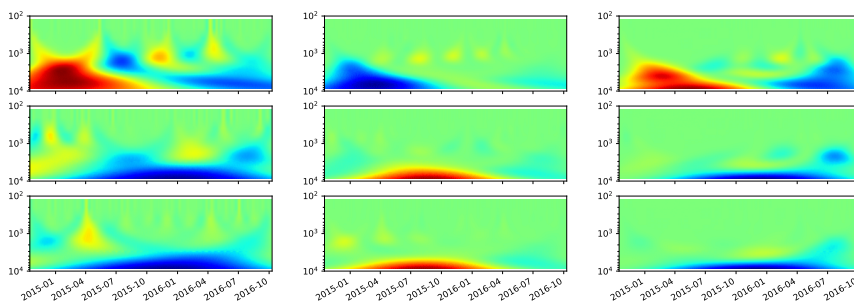

Figure S15. Left: Wavelet coherence between Mexican hat wave and E_h at UD plot, 15 cm depth; center: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at UD plot, 15 cm depth. 3 probes plotted separately.
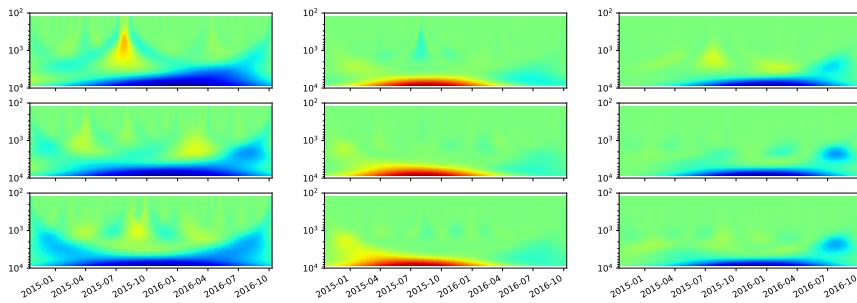
Figure S16. Left: Wavelet coherence between Mexican hat wave and E_h at the UD plot (25 cm depth); centre: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at the UD plot (25 cm depth). Three probes plotted separately.
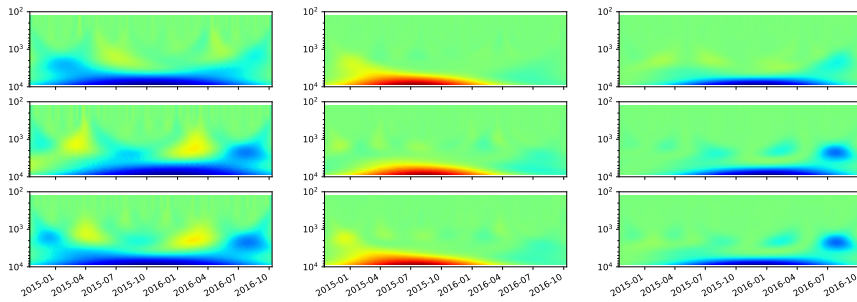

Figure S17. Left: Wavelet coherence between Mexican hat wave and E_h at UD plot, 35 cm depth; center: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at UD plot, 35 cm depth. 3 probes plotted separately.
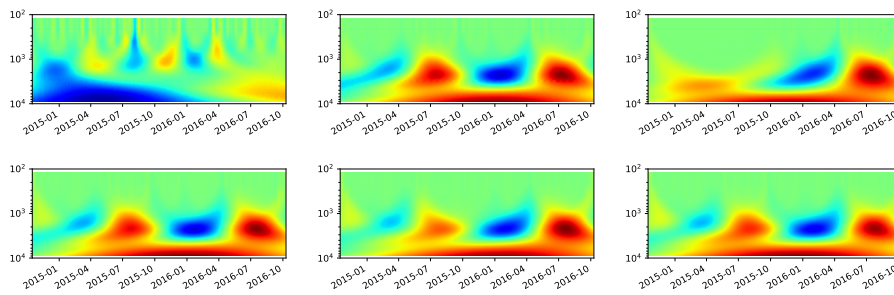

Figure S18. Left: Wavelet coherence between Mexican hat wave and E_h at the UD plot (45 cm depth); centre: interaction between E_h and WTL wavelets; right: interaction between E_h and soil temperature wavelets at the UD plot (45 cm depth). Three probes plotted separately.

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