Correlation of Wind Speed and Eruption Frequency of Strokkur Geyser, Iceland

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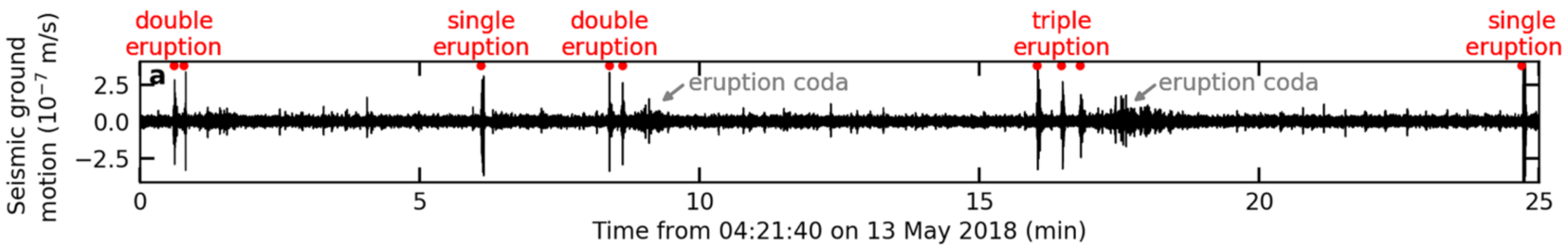
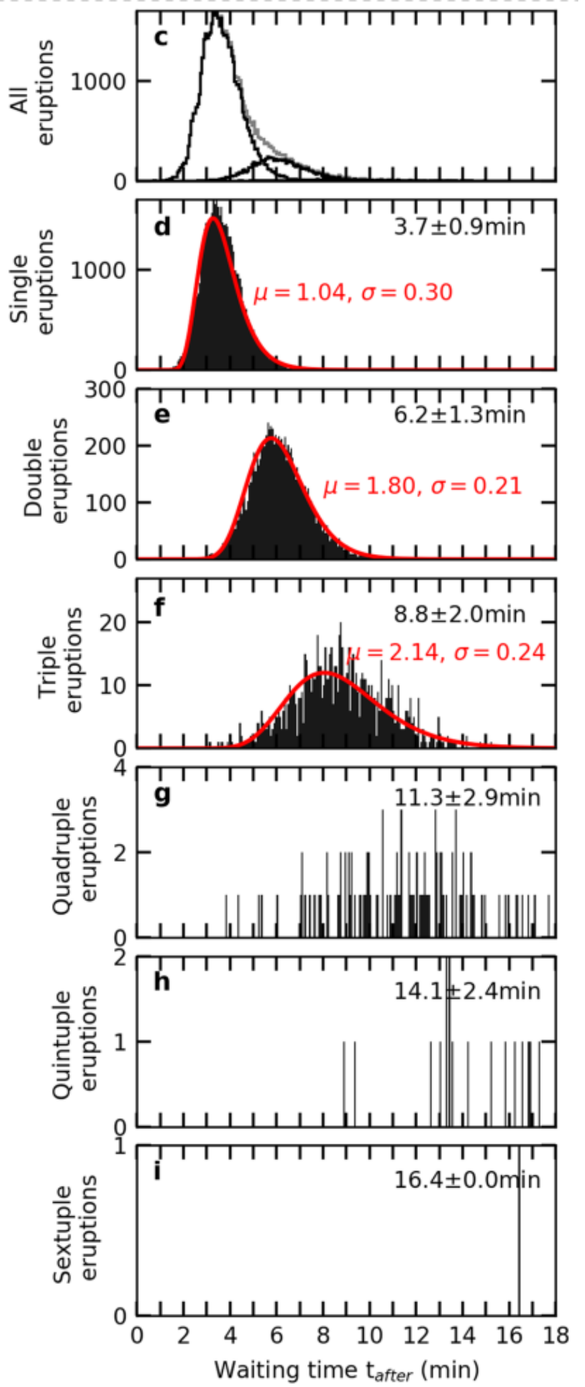
1

Eruptions at Strokkur are regular but not always on time



Eibl, et al., 2020



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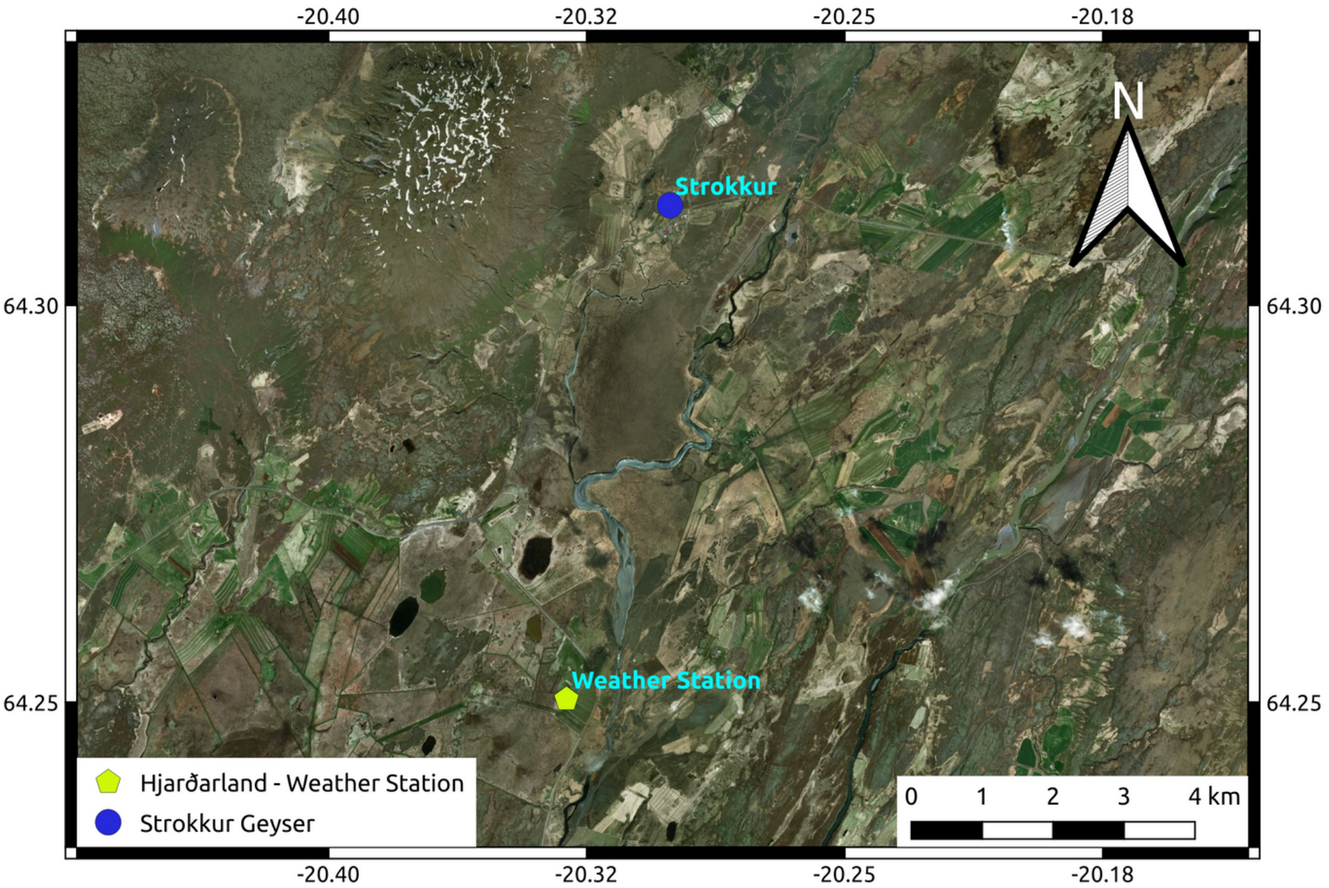
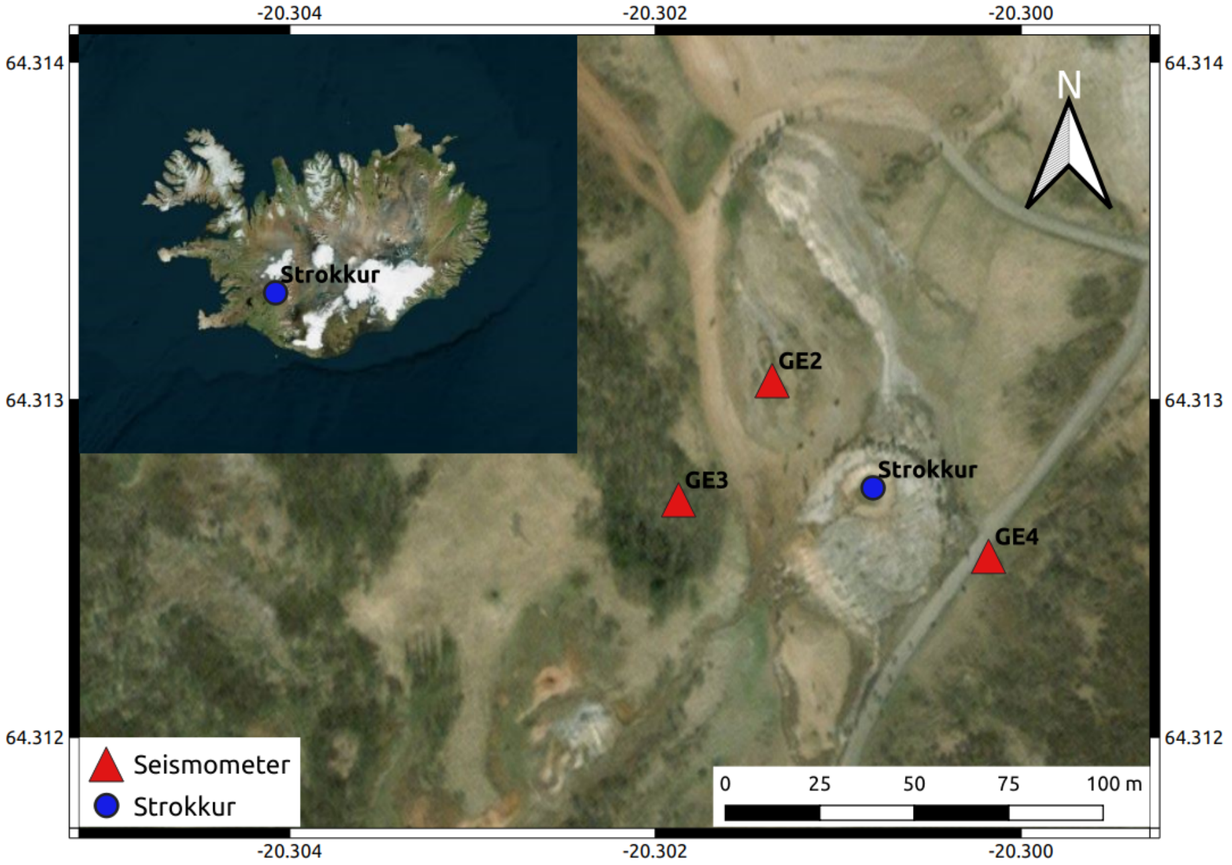
2

Monitoring eruptions of Strokkur geyser, Iceland, using seismometers





Recorded Data: 2017-06 : 2018-06 & 2020-03 : 2021-08

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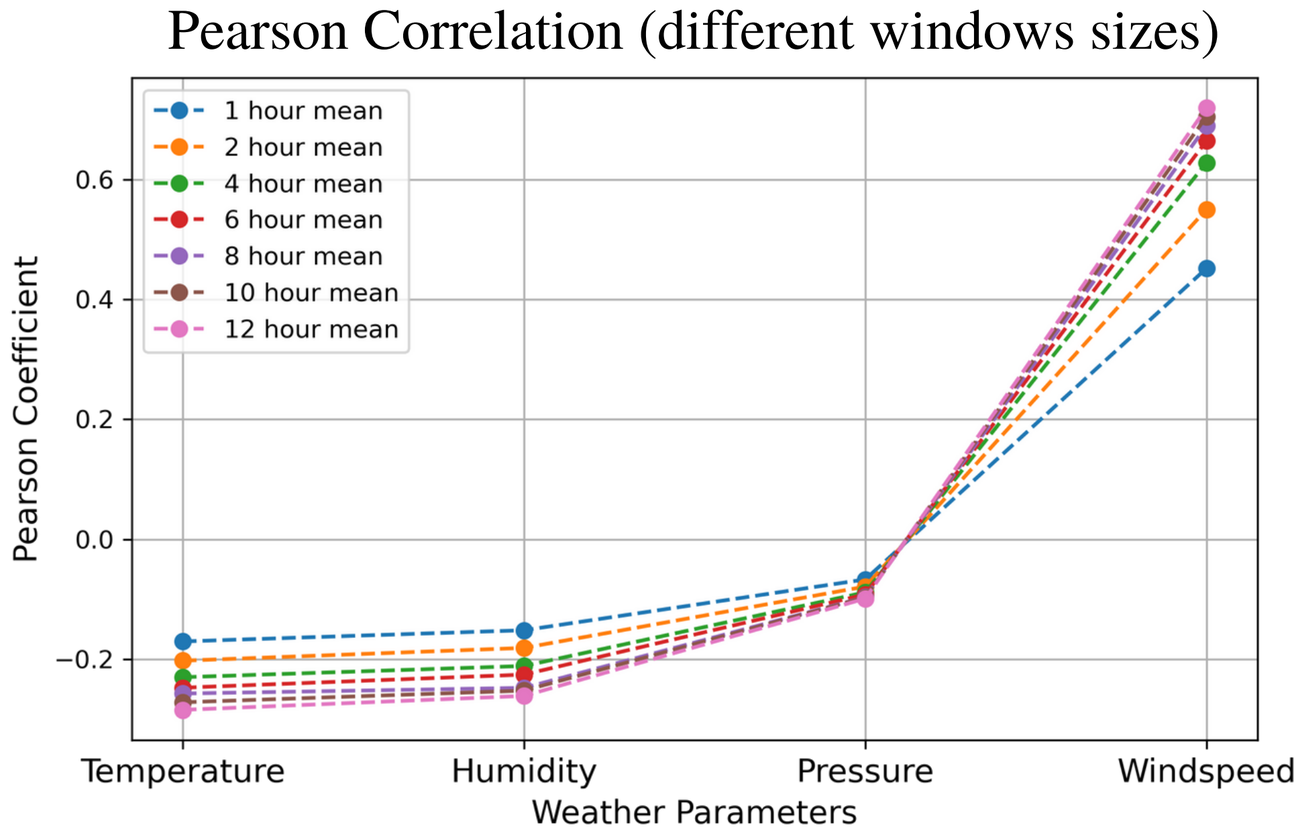
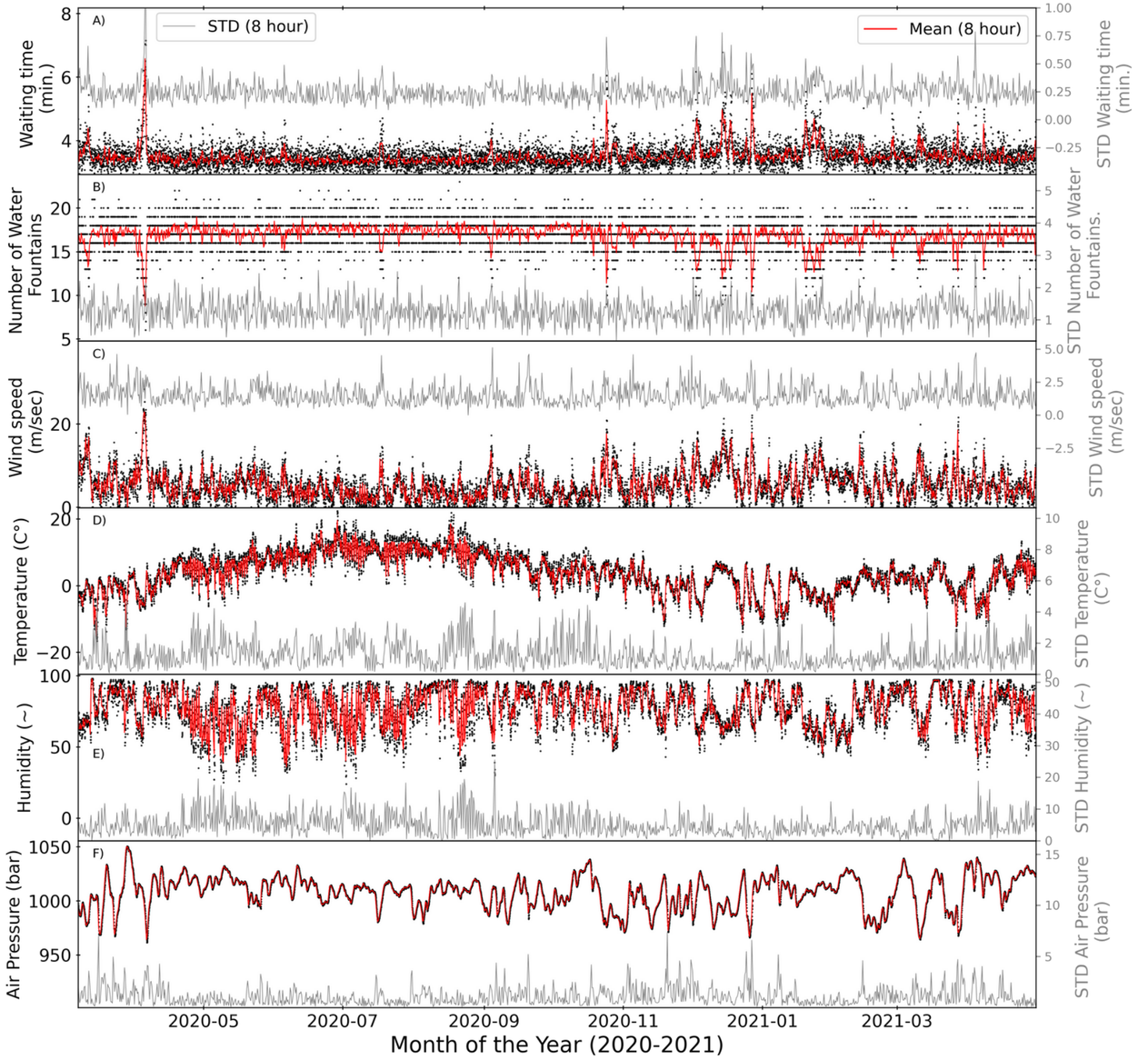
3 The Frequency of water fountains is affected by the weather?





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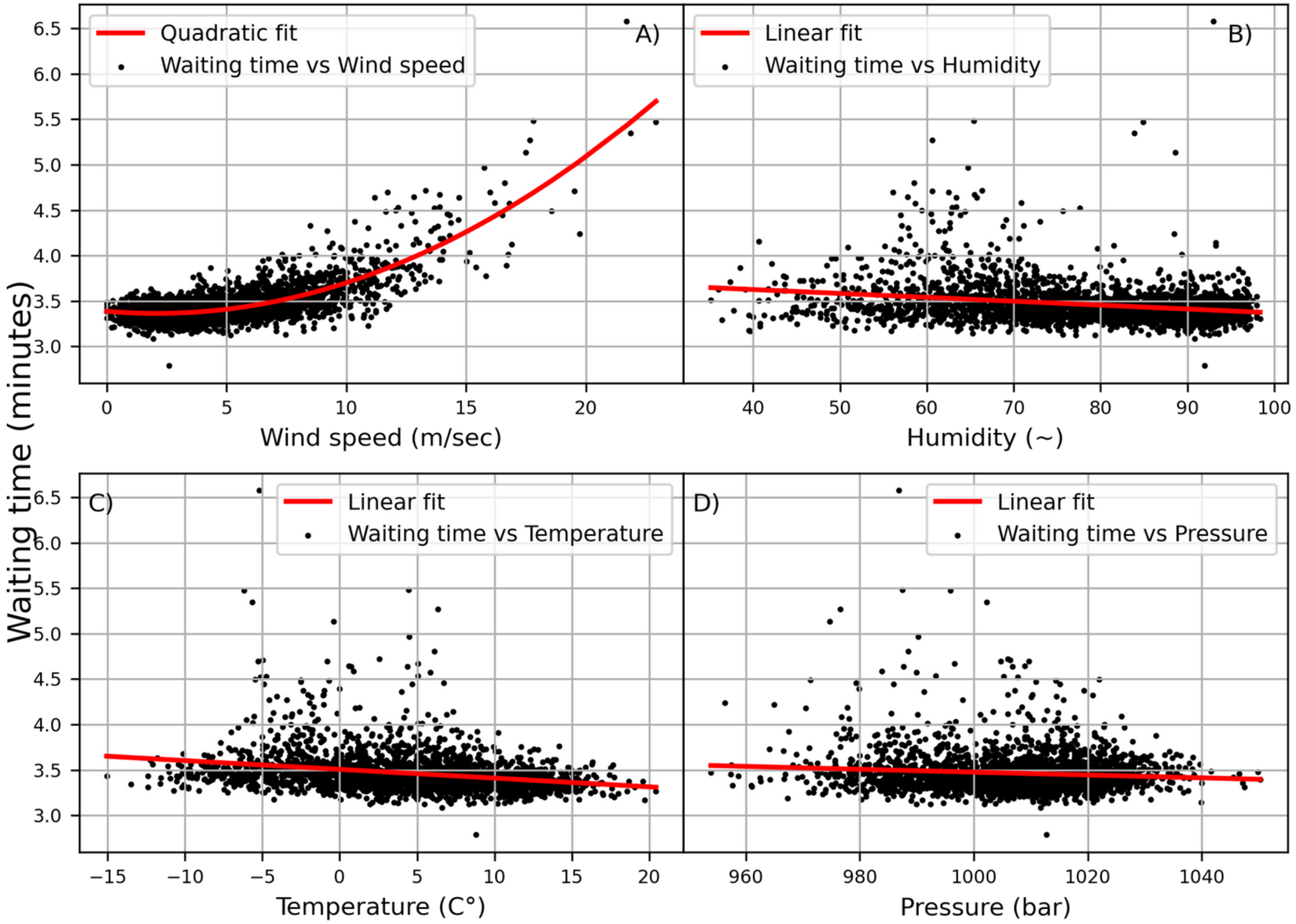
4 The waiting time after eruptions increases with increasing wind speed



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5 The wind speed affects all phases of the eruptive cycle

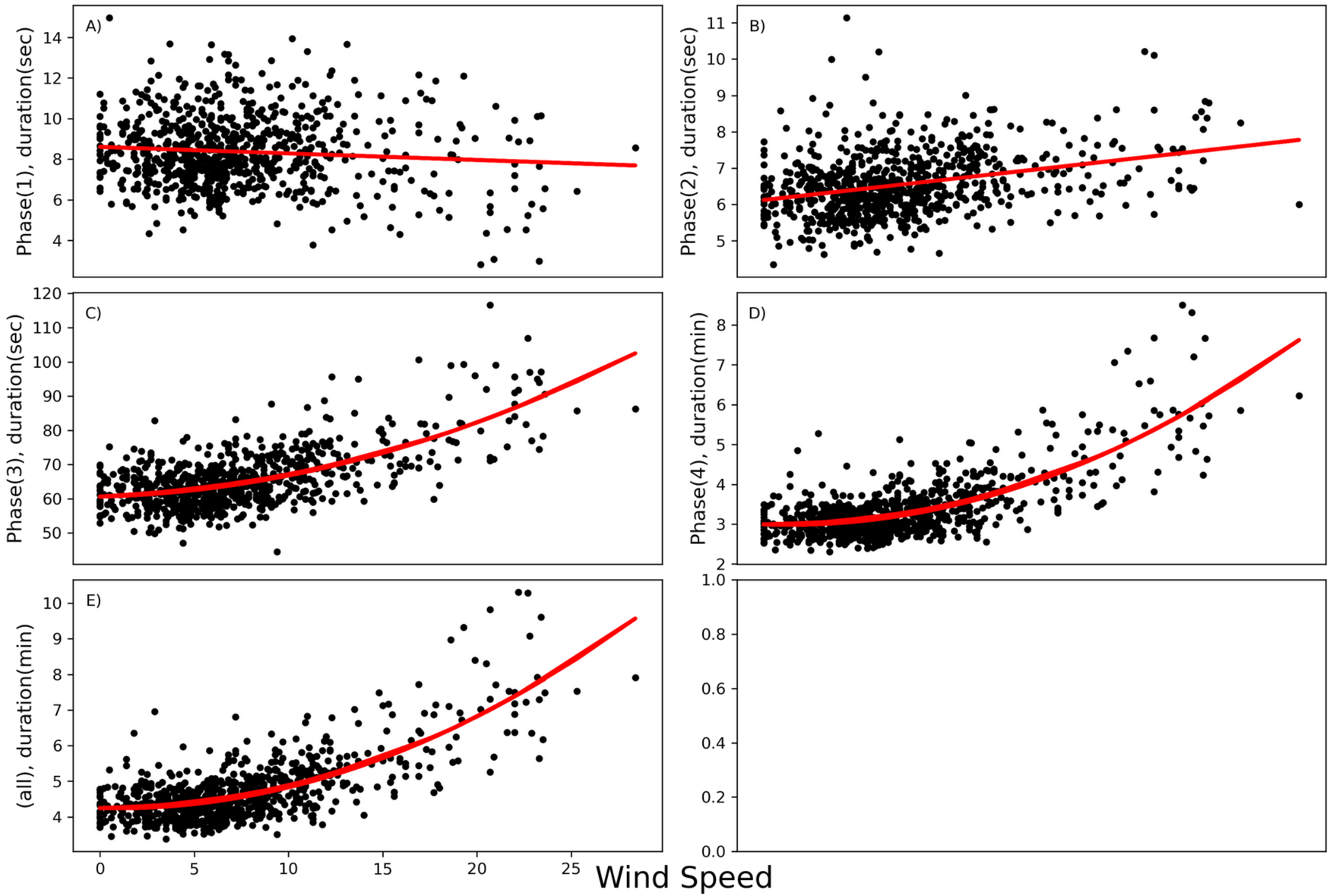
Water fountain on surface

Refilling of the conduit with water

Gas filling of the bubble trap

Regular bubble collapse at shallow depth in the conduit

Whole eruptive cycle from one water fountain to next one



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6 Summary and outlook

- The waiting time after geyser eruptions increases with increasing wind speed
- More heat is lost from the system during high wind speed and it takes longer to heat the water in the system to get ready for eruption
- Further investigations needed to investigate the lack of correlation with air pressure and the reason for the quadratic correlation with the wind speed

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