

University of Groningen

## Seismic site response in the Netherlands

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# Propositions

accompanying the dissertation

## Seismic site response in the Netherlands

Impact of the shallow subsurface composition on earthquake ground motion amplification

by

Janneke van Ginkel

- [1] By constructing probability density functions of long-time spans with short HVSR windows, the variation in amplitude spectra illuminates changing subsurface conditions. **Chapter 3**
- [2] Despite the enormous amount of research performed on site response in Groningen, **Chapter 4** presents a novel empirical approach that allows for the definition of a proxy for ground motion amplification by means of the HVSR.
- [3] The amplification factor covering a wide frequency band, provides a more reliable result than amplification factors calculated for multiple small bands due to the broad-band nature of the signals. **Chapter 5 & 7**
- [4] Do we care about vertical ground motion amplification? Yes, we care. **Chapter 6**
- [5] Always look at the sky. First assess the situation empirically before trusting the models. **Chapter 7**
- [6] The novel method presented in this thesis can be globally applied to estimate the site response.
- [7] For risk assessment and reinforcement operations, it is essential to include the site response as provided in this thesis because of the high spatial resolution.
- [8] Apparently, this rapid changing world might not allow a definitive closure of the Groningen field, but still, it should allow for compensation for the inhabitants.
- [9] Brilliant ideas are born while riding a bike.
- [10] Site response in the Netherlands is best studied from the Alps.

These propositions are considered as opposable and defensible and as such have been approved by the promotor Prof. Rien Herber