Appendix A. Supporting figures

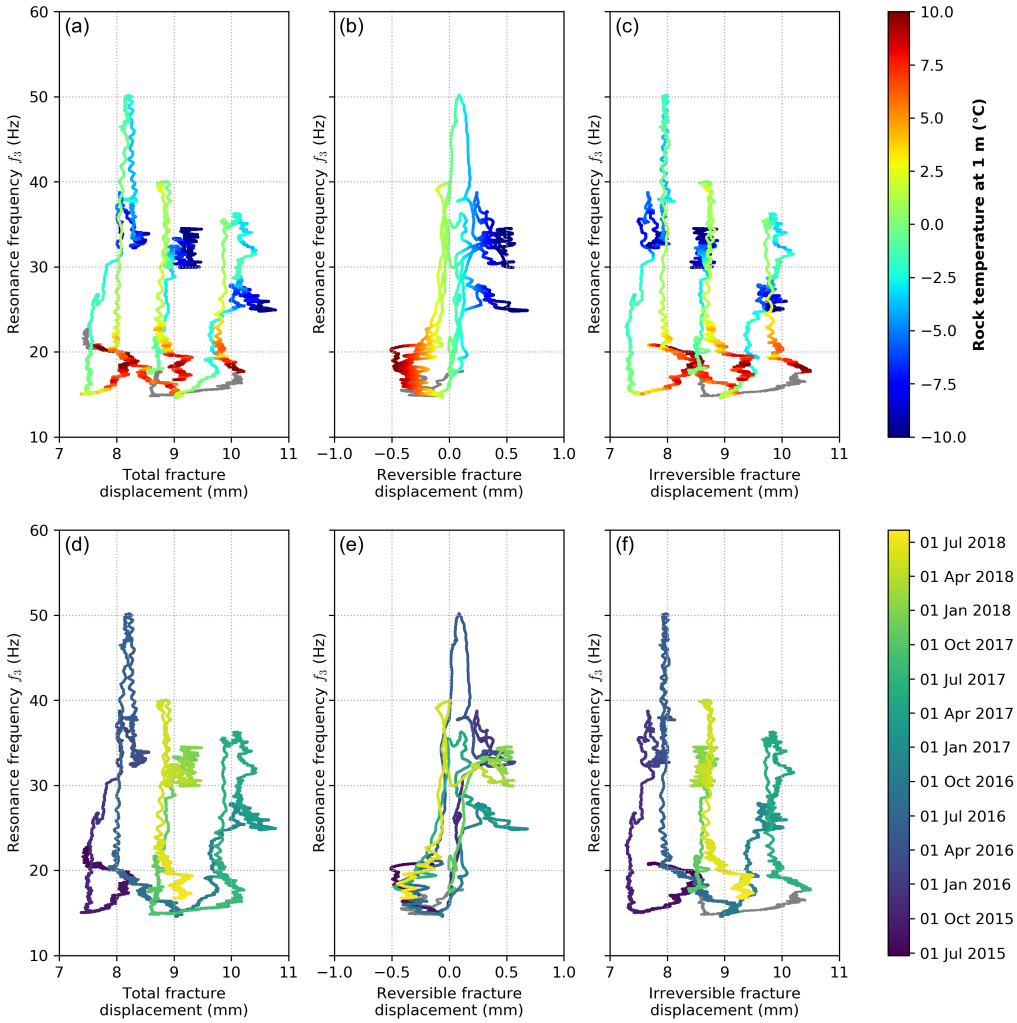

Figure A.8: For site SM_{scarp}: Relation between resonance frequency f_3 and fracture displacement for total fracture displacement (a+d), reversible fracture displacement (b+e) and irreversible fracture displacement (c+f). Colors indicate rock temperature (a–c) or time (d–f).

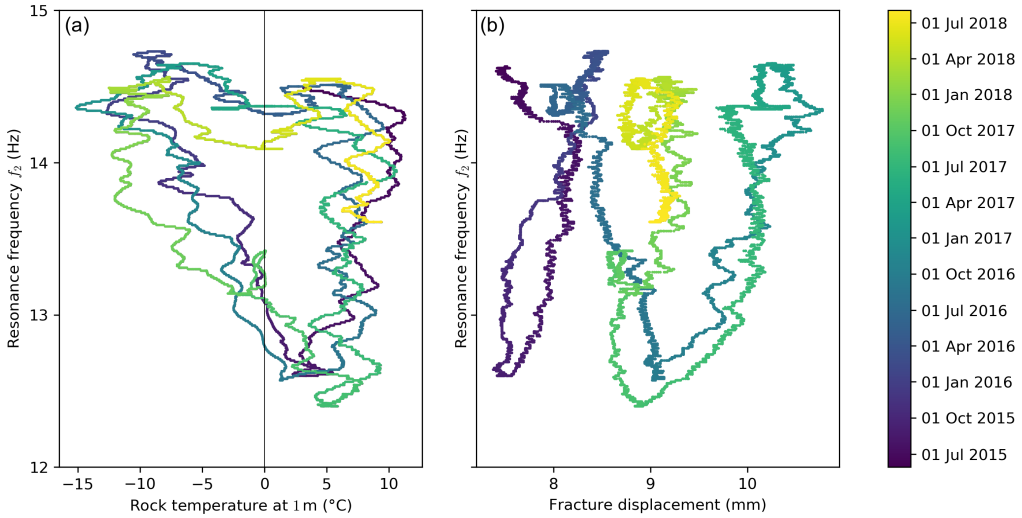

Figure A.9: For station SM_{scarp}: Relation between resonance frequency f_2 and (a) rock temperature and (b) fracture displacement over the course of more than three years respectively, whereas color indicates the time. Relation between resonance frequency and fracture displacement after separating reversible from irreversible component is shown in Figure A.10.

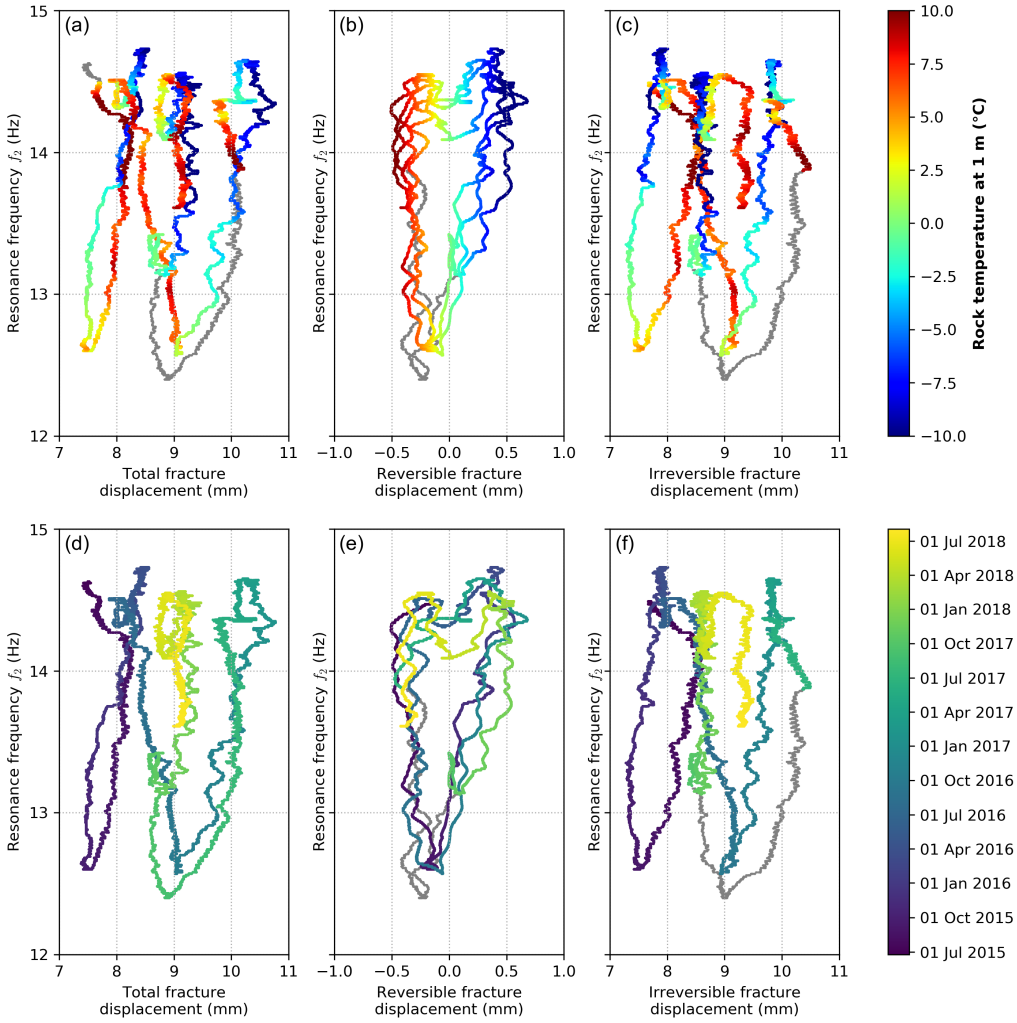

Figure A.10: For site SM_{scarp}: Relation between resonance frequency f_2 and fracture displacement for total fracture displacement (a+d), reversible fracture displacement (b+e) and irreversible fracture displacement (c+f). Colors indicate rock temperature (a–c) or time (d–f).

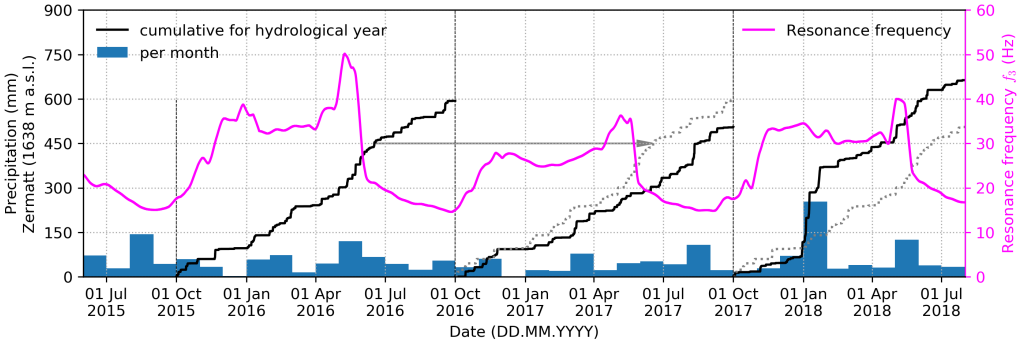

Figure A.11: Relation between resonance frequency and precipitation. The gray dotted line is a copy of the hydrological year 2015/2016.

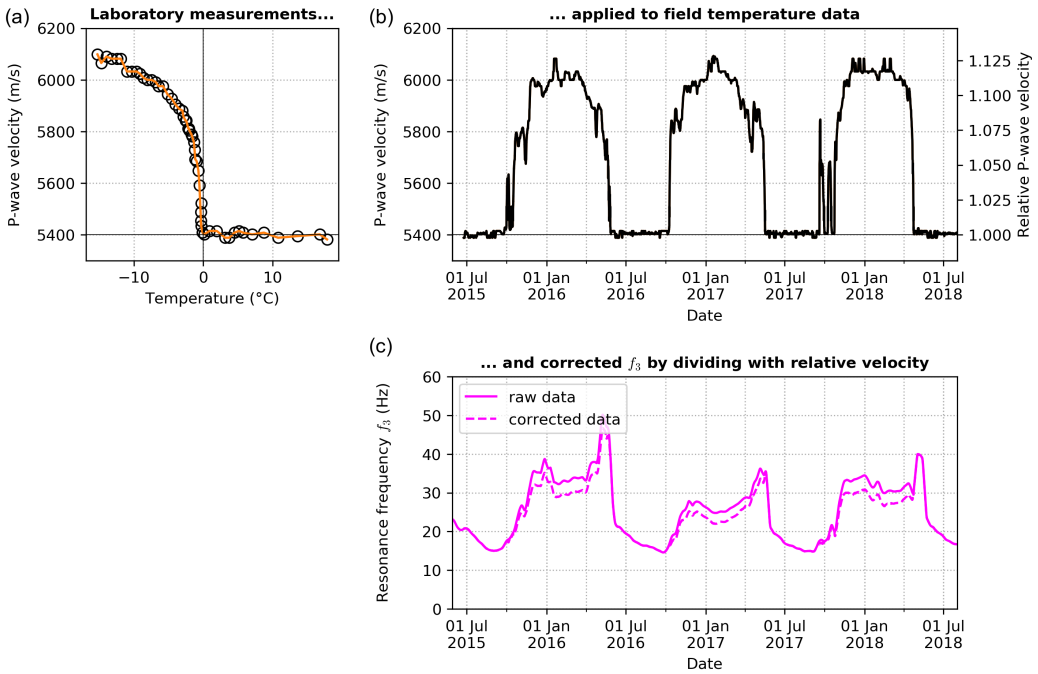

Figure A.12: Influence of temperature dependent P-wave velocity on resonance frequency f_n assuming an oversimplified homogeneous temperature field. (a) Laboratory measurements (Draebing and Krautblatter, 2012) with rock samples from Matterhorn (b) applied to field temperature data. As f_n proportional to P-wave velocity c, the recorded f_n in the field is temperature corrected by dividing with the relative P-wave velocity.