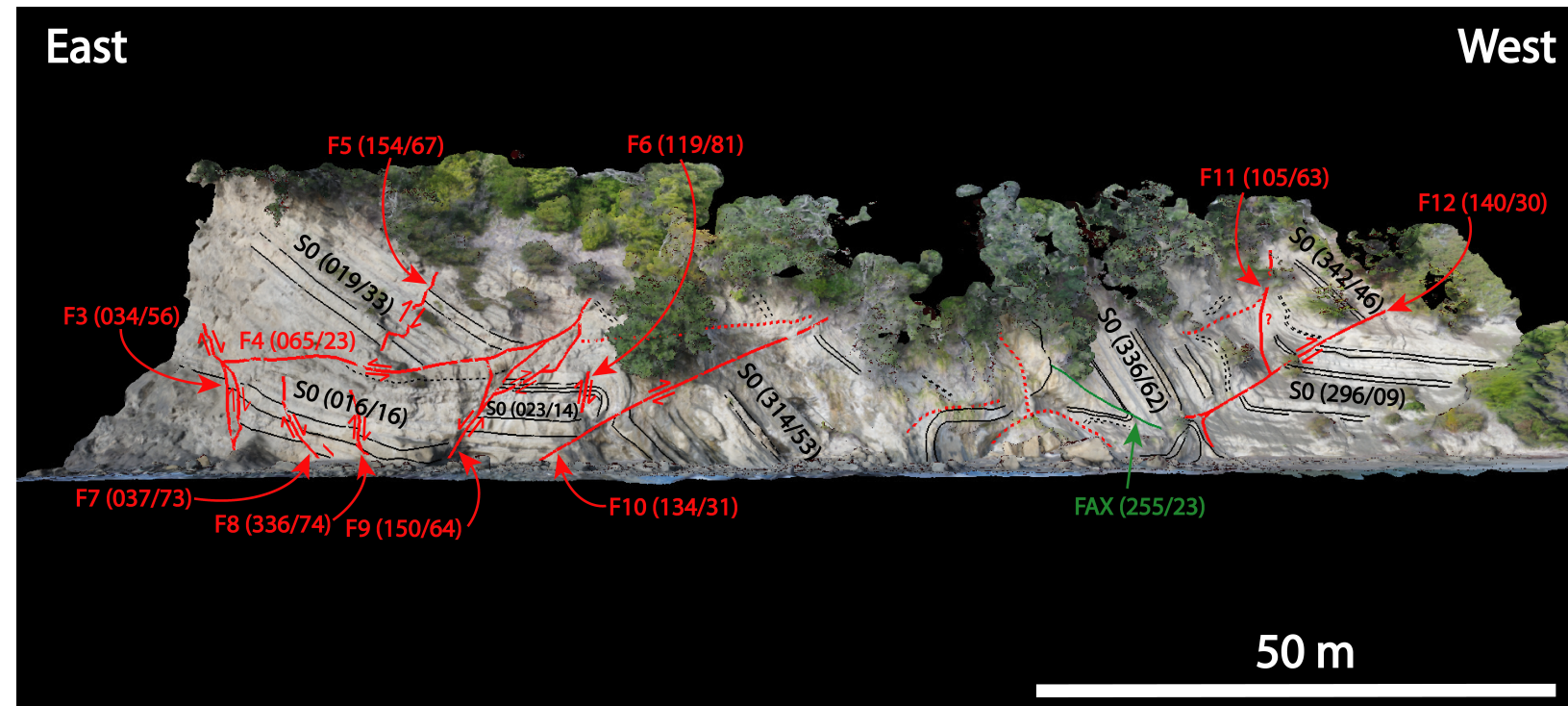# UAS based imaging and refined geologic modelling of the Waiwera Geothermal Reservoir

Aims: Extending the extisting geological and structural data of the Waiwera area to create a geological model that can be applied to improve the process based simulations of the reactive flow model of Waiweras geothermal reservoir by Kühn and Stöfen (2005), to help ensuring a sustainable usage of the resource. Furthermore, proposing a statement about the possible reactivation of Waiweras hot springs.

Methods: Manual data collection (litholog, scanline measurements), rock sampling, petrophysical analysis (porosity and permeability measurements), petrographic analysis (X-ray diffraction, thin sections), UAS mapping for 3D model construction, (UAS) infrared thermal observation.

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W–E and NE–SW trending faults and fractures represent the best fluid pathways

Results:
- Good reservoir properties disregarding the low permeability of the turbidite sequences through the presence of fluid pathways along open faults and fractures
- Complex structural setting
- Great relevance of anticlockwise bending of the western North Island for the development of W–E trending (oblique-slip) faults
- Majority of structures linked to dominant extensional setting
- Renewed activity of the geothermal hot springs on the beachfront of Waiwera, confirming the presence of open faults and fractures

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