

## Using Reservoir Models for Monitoring Geothermal Surface Features

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**Abstract :** As the use of geothermal energy grows internationally more effort is required to monitor and protect areas with rare and important geothermal surface features. A number of approaches are presented for developing and calibrating numerical geothermal reservoir models that are capable of accurately representing geothermal surface features. The approaches are discussed in the context of cases studies of the Rotorua geothermal system and the Orakei-korako geothermal system, both of which contain important surface features. The results show that models are able to match the available field data accurately and hence can be used as valuable tools for predicting the future response of the systems to changes in use.

**Keywords :** geothermal reservoir models, surface features, monitoring, TOUGH2

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