

# Liquefaction Risk Assessment AI

Liquefaction risk can be estimated without ground data

## Overview

Liquefaction is a phenomenon where the ground becomes in liquid form and loses suddenly its resistance. It occurs when vibrations from earthquake or construction are applied to soft ground containing lot of sand and having high groundwater level. It causes significant damage to structures located on the ground surface or underground. Therefore, the practical application of technology to assess the liquefaction level is required.

There are conventional methods to assess liquefaction risk using AI, but they all require ground data. However, although those ground data can be collected by boring, method for Swedish weight sounding test or surface wave survey, these operations require huge resources.

This invention can assess the liquefaction risk level without requiring the work of collecting ground data.

## Product Application

- ❑ Ground and geological evaluation
- ❑ Estimation of the liquefaction occurrence at a specific point after an earthquake

## IP Data

IP No. : JP2020-116602, US17/367,074  
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 Admin No. : T20-046

## Features・Outstandings



Comparison of the AI evaluation result based on seismic movement observed with K-net and KIK-net of National Research Institute

## Related Works

[1] Akiyoshi Kamura, Go Kurihara, Tomohiro Mori, Motoki Kazama, Youngcheul Kwon, Jongkwan Kim, and Jin-Tae Han, Exploring the possibility of assessing the damage degree of liquefaction based only on surface seismic records by artificial neural networks

## Contact