

ABSTRAK

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Program Studi : Fisika
Judul : Potensi Likuifaksi di Desa Rancakasumba Kecamatan Solokan Jeruk Menggunakan Metode Geolistrik Konfigurasi *Wenner-Alpha*

Desa Rancakasumba, Kecamatan Solokan Jeruk merupakan daerah dekat sumber gempa bumi. Struktur tanah di daerah tersebut tersusun atas lapisan lempung lunak dengan pasir padat dan lempung padat yang rentan terhadap likuifaksi akibat gempa bumi. Metode geolistrik konfigurasi *Wenner-Alpha*, digunakan dalam menganalisis potensi likuifaksi berdasarkan sebaran resistivitas batuan di bawah permukaan. Data pengukuran geolistrik konfigurasi *Wenner-Alpha* dimodelkan dengan *software pyGIMLi*. Hasil penelitian yang dilakukan pada 5 lintasan mendapatkan nilai resistivitas batuan pasir yang berpotensi mengalami likuifaksi pada kedalaman tertentu. Dengan nilai resistivitas di setiap lintasan sebesar 61-69.98 Ωm pada kedalaman 11-20 meter, 61-139 Ωm pada kedalaman 13-20 meter, 61-86.30 Ωm pada kedalaman 8-15 meter, 61-90.13 Ωm pada kedalaman 9-20 meter dan 61-77.63 Ωm pada kedalaman 8-16 meter. Pada penelitian ini juga didapatkan bahwa lokasi penelitian memiliki muka air tanah yang dangkal ditunjukkan dengan adanya lapisan lempung lunak pada kedalaman 0-4 meter.

Kata Kunci: Likuifaksi, Geolistrik, *Wenner-Alpha*, *pyGIMLi*, Resistivitas.

ABSTRACT

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Studies Program : Physics
Title : *Potential Liquefaction in Rancakasumba Village, Solokan Jeruk Using Wenner-Alpha Configuration Goelectric Method*

Rancakasumba Village, Solokan Jeruk is an area near the source of earthquake. The soil structure in this area is composed of a layer of soft clay with dense sand and compacted clay which is susceptible to liquefaction due to earthquakes. The Wenner-Alpha configuration goelectric method is used to analyze the potential liquefaction based on the distribution of rock resistivity below the surface. Wenner-Alpha configuration goelectrical measurement data were modeled with pyGIMLi software. The results of research conducted on 5 line get the resistivity value of sandstone which has the potential to cause liquefaction at a certain depth. With resistivity values in each line of 61-69.98 Ωm at a depth of 11-20 meters, 61-139 Ωm at a depth of 13-20 meters, 61-86.30 Ωm at a depth of 8-15 meters, 61-90.13 Ωm at a depth of 9-20 meters and 61-77.63 Ωm at a depth of 8-16 meters. In this research also found that the research location has a shallow groundwater indicated by the presence of a layer of soft clay at a depth of 0-4 meters.

Keyword: *Liquefaction, Goelectric, Wenner-Alpha, pyGIMLi, Resistivity.*