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Penulis : **Lisa Yihaa Roodhiyah**, Nurhasan, Tiffany, Prihandhanu Mukti Pratomo, Anggie Susilawati, Supriyadi, Yasuo Ogawa, Didik Sugiyanto, Doddy Sutarno dan Wahyu Srigutomo

No.	Perihal	Tanggal	Bukti
1.	Bukti konfirmasi submit artikel dan artikel yang disubmit	19 Juli 2024	Lampiran 1
2.	Bukti konfirmasi review (status <i>under review</i>)	6 Agustus 2024	Lampiran 2
3.	Bukti konfirmasi submit hasil review pertama dan artikel yang diresubmit	15 Oktober 2024	Lampiran 3
4.	Bukti artikel diterima (status <i>accepted</i>)	6 November 2024	Lampiran 4
4.	Bukti konfirmasi artikel published online	5 Desember 2024	Lampiran 5

Lampiran 1.

Manuscript Status

Incomplete submissions (0) Under processing (0) Website Online (1) Rejected / Withdrawn / Archived (0)					
Manuscript ID	Journal	Section / Special Issue	Title	Status	Submission Date
appls-ci-3140337 B	Applied Sciences		Interpretation of a 3-D Magnetotellurics Model of the Aceh and Seulimeum Segments of the Sumatran Fault Zone	Website online	2024-07-19 18:51:27 Create or connect your ORCID ID

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Manuscript ID: applsci-3140337
Type of manuscript: Article
Title: Interpretation of a 3-D Magnetotellurics Model of the Aceh and Seulimeum Segments of the Sumatran Fault Zone
Authors: Lisa Yihaa Roodhiyah, Nurhasan Nurhasan *, Tiffany Tiffany, Prihandhanu Mukti Pratomo, Yasuo Ogawa, Fumiaki Kimata, Didik Sugiyanto, Doddy Sutarno, Wahyu Srigutomo
Received: 19 Jul 2024

Lampiran 2.

[Applied Sciences] Manuscript ID: applsci-3140337 - Major Revisions

A To: Nurhasan Nurhasan <nurhasan@itb.ac.id> Tue 8/6/2024 6:54 PM
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Dear Dr. Nurhasan,

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Manuscript ID: applsci-3140337
Type of manuscript: Article
Title: Interpretation of a 3-D Magnetotellurics Model of the Aceh and Seulimeum Segments of the Sumatran Fault Zone
Authors: Lisa Yihaa Roodhiyah, Nurhasan Nurhasan *, Tiffany Tiffany, Prihandhanu Mukti Pratomo, Yasuo Ogawa, Fumiaki Kimata, Didik Sugiyanto, Doddy Sutarno, Wahyu Srigutomo
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[Applied Sciences] Manuscript ID: applsci-3140337 - Manuscript Resubmitted

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To: Nurhasan Nurhasan <nurhasan@itb.ac.id>
Cc: Lisa' Yihaa Roodhiyah; Tiffany Tiffany <public.tiffany@gmail.com>; +6 others

Dear Dr. Nurhasan,

Thank you very much for resubmitting the modified version of the following manuscript:

Manuscript ID: applsci-3140337
Type of manuscript: Article
Title: Interpretation of a 3-D Magnetotellurics Model of the Aceh and Seulimeum Segments of the Sumatran Fault Zone
Authors: Lisa Yihaa Roodhiyah, Nurhasan Nurhasan *, Tiffany Tiffany, Prihandhanu Mukti Pratomo, Yasuo Ogawa, Fumiaki Kimata, Didik Sugiyanto, Doddy Sutarno, Wahyu Srigutomo
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Cc: Lisa' Yihaa Roodhiyah; Tiffany Tiffany <public.tiffany@gmail.com>; +9 others

Dear Dr. Nurhasan,

Congratulations on the acceptance of your manuscript, and thank you for submitting your work to Applied Sciences:

Manuscript ID: applsci-3140337

Type of manuscript: Article

Title: Interpretation of a 3-D Magnetotellurics Model of the Aceh and Seulimeum Segments of the Sumatran Fault Zone

Authors: Lisa Yihaa Roodhiyah, Nurhasan Nurhasan *, Tiffany Tiffany, Prihandhanu Mukti Pratomo, Anggie Susilawati, Supriyadi Supriyadi, Yasuo Ogawa, Didik Sugiyanto, Doddy Sutarno, Wahyu Srigutomo

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Lampiran 5.

[Applied Sciences] Manuscript ID: applsci-3140337; doi: 10.3390/app142311335. Paper has been published.



faustina.zhao@mdpi.com on behalf of applsci@mdpi.com

Thu 12/5/2024 1:13 PM

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Dear Authors,

We are pleased to inform you that your article "Interpretation of a 3D Magnetotellurics Model of the Aceh and Seulimeum Segments of the Sumatran Fault Zone" has been published in Applied Sciences and is available online at the following links:

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Article

Interpretation of a 3D Magnetotellurics Model of the Aceh and Seulimeum Segments of the Sumatran Fault Zone

Lisa Yihaa Roodhiyah^{1,2}, Nurhasan^{1,*}, Tiffany¹, Prihandhanu Mukti Pratomo¹, Anggie Susilawati³, Supriyadi¹, Yasuo Ogawa⁴, Didik Sugiyanto⁵, Doddy Sutarno¹ and Wahyu Srigutomo¹

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Abstract: The Sumatran Fault runs from the southeast (SE) to the northwest (NW) of Sumatra Island, with the highest slip rates reaching about 3.0 cm per year in the northwestern part. There is a seismic gap along this fault, including the northern Aceh domain, which consists of the Aceh and Seulimeum fault segments. Previous studies have used various methods to investigate the Sumatran Fault system, including seismic, geoelectric, gravity anomaly, and magnetotellurics (MT). The MT method has proven advantageous as it can non-destructively image a wide range of depths. However, previous studies using the two-dimensional (2D) MT inversion did not represent realistic information of the subsurface conditions. Therefore, a three-dimensional (3D) MT data inversion was used in this study to obtain more realistic information about the resistivity structure of the Aceh and Seulimeum segments. The results confirmed that the Sumatran Fault is a strike-slip fault, with a relatively northwest (NW)–southeast (SE) direction of conductivity strike with an angle of S 71.61° E from Groom–Bailey decomposition of MT data. The 3D resistivity distribution model from 33 stations showed that the Aceh Fault Segment is 20–30 km away, while the Seulimeum Fault Segment is 55–60 km away based on the MT data. The results also indicated a creeping zone at a depth of 2 km beneath the Aceh Fault Segment. Different rock formations were identified beneath the fault system, with the western part of the Aceh Segment dominated by high-resistivity metamorphic rocks (150–1000 Ωm) from the Triassic–Cretaceous age. The zone between the Aceh and Seulimeum fault segments exhibited low resistivity, characterized by volcanic rocks (1–15 Ωm) from the Lam Teuba Volcanic Formation and the Indrapuri Formation. Beneath the eastern part of the Seulimeum Fault Segment was found to consist of low-resistivity quaternary volcanic rocks (1–15 Ωm) and high-resistivity andesite rocks (4.5×10^4 – 1.7×10^5 Ωm). These findings correlated well with the geological map.



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