

of Fault Zone in Bali Using Ggmplus Gravity and ALOS-2 PALSAR-2 Data

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The local active fault in Bali has a small magnitude ($M < 5$) but has a destructive potential. This study used gravity data from GGMplus, topographic data from DEMNAS, and lineaments using ALOS-2 PALSAR-2 data. To identify the fault movement, we interpret the subsurface using the gravity derivative method. Identification of fault locations using lineament extraction from SAR data has been done by directional filters. The composite image red-green-blue for HH, HV, and VV polarization, respectively was used for automatic lineament extraction which was then manually corrected. The results of the gravity method succeeded in identifying 29 of the 30 faults from the geological map of the Bali sheet and new fault from PALSAR-2. Bali has 12 thrust faults, 11 strikeslip faults and six normal faults. The image of PALSAR-2 has succeeded in making a fault lineament map for the Bali region. The lineament extraction results from PALSAR-2 obtained four new faults (Pesanggaran, Sepang, Tegal Badeng, and Banyuwedang) while there were four faults that were not identified (Tampaksiring Fault, Plaga, Mambal, and Munduk-Rajasa). We propose 30 faults in Bali including 26 faults from geological maps with changes in length and location shift and four new faults extracted from automatic straightness.

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Promotional text

Remote sensing has become a suitable tool for identifying large numbers of faults.

Oral preference format

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