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Interpretation of postseismic GPS and gravity changes

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To monitor gravity changes and deformation at the western branch of the North Anatolian Fault around the Marmara Sea, a gravity and deformation network, consisting of 25 points, was established in 2003. Since then, six field campaigns were carried out to observe relative gravity changes. Additionally, time series from a GPS network, consisting of 67 points, including 18 permanent stations, are available. The observed changes in gravity, combined with vertical and horizontal postseismic deformation are used to model the elastic and geometric parameters of the fault system by linear optimization methods (genetic algorithm) using a model based on the viscoelastic-gravitational dislocation theory (PSGRN/PSCMP).