# Refitting Equations for Peak Ground Acceleration in Light of the PF-L Database

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**Abstract :** Systematic overview of existing Ground Motion Prediction Equations (GMPEs) has been published by Douglas. The number of earthquake recordings that have been used for fitting these equations has increased in the past decades. The current PF-L database contains 3550 recordings. Since the GMPEs frequently model the peak ground acceleration (PGA) the goal of the present study was to refit a selection of 44 of the existing equation models for PGA in light of the latest data. The algorithm Levenberg-Marquardt was used for fitting the coefficients of the equations and the results are evaluated both quantitatively by presenting the root mean squared error (RMSE) and qualitatively by drawing graphs of the five best fitted equations. The RMSE was found to be as low as 0.08 for the best equation models. The newly estimated coefficients vary from the values published in the original works.