

Direction-based P-wave Traveltime Residual Estimation for some Stations around Southern Thailand, Peninsular Malaysia, Singapore and Sumatra using a New Ray Tracing Algorithm

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ds01: DATASET-1964-2018
ds02: OUTPUT2-RESIDUALS

Introduction

DATASET-1964-2018 is a text file of arrival time dataset for or earthquakes (magnitude > 3.5 mb) and confined to the top 100 km in focal depths that have occurred around the Sumatran Fault System spanning latitudes 10° N - 10° S and longitudes 92° E-114° E.

OUTPUT2-RESIDUALS is also a text file with the calculated first-arrival p wave residual values for 117 broadband stations around southern Thailand, Peninsular Malaysia, Singapore, Sumatra region of Indonesia, Australia and India

- Both ds01 and ds02 are text files;
- ds01 include hypocentral parameters, origin time, magnitude and event ID as well as first-arrival time picks of p waves from both the bulletin of International Seismological Center (BISC) and the Incorporated Research Institutions for Seismology (IRIS). ds02 include arrival ID (ARVD), Event ID (EVID), focal depth in km (DEP) calculated epicentral distance in km (DXD), calculated back-azimuth in angular degrees (BAZI), calculated residual in seconds (RESC) and BISC reported residuals (RESR);

- Phase picking from the IRIS waveforms is done with the SEISAN software. The corresponding S-file from SEISAN is added to the BISC dataset. A Fortran routine is used to compute traveltimes and raypaths;
- Seismic stations KOM and KUM (IRIS station code names) are observed to be the same as stations MYKOM and KULM respectively on the BISC station list