

Data Files from “CWB Free-Field Strong-Motion Data from the 21 September Chi-Chi, Taiwan, Earthquake”

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The Central Weather Bureau (CWB) of Taiwan completed a deployment of 1200 modern digital strong-motion instruments in 1996 at free-field sites and in buildings and bridges. Consequently, a very extensive set of strong-motion records were obtained for the $M_W = 7.6$ Chi-Chi earthquake in 1999, including over 60 near-field records within 20 km of the fault ruptures.

For documentation purposes, we included all relevant data files on the attached CD-ROM from our article, “CWB Free-Field Strong-Motion Data from the 21 September Chi-Chi, Taiwan, Earthquake” in this issue. We presented the data in four different ways to make the data more user friendly: (1) the original recorded data by accelerograph type; (2) the processed data in ASCII text format; (3) the processed data in SUDS format; and (4) the processed data in SAC format. (1)–(3) are exactly the same as in Lee *et al.* (2001), except the files are zipped (or compressed). (4) is provided for users using the SAC software on a Unix computer, and it also contains waveform plots of the data in PDF files for ease of viewing.

The attached CD contains the full report of Lee *et al.* (2001) in 25 PDF files for viewing or printing. This full report described the data set and the data processing performed in details. It also contains plots of all processed data with an index map showing the fault, mainshock location, and the station location. We also provided a readme.txt on the CD-ROM to augment this Short Note with further explanations.

We classify the recorded data files into four quality groups. Since the recorded strong-motion data are based on a triggering algorithm, a main concern is the amount of pre-event data and whether or not the record is long enough to cover the entire duration of the ground shaking at that station. In addition, we are concerned whether or not the record has defects (e.g., spikes, or a component was not recorded), and whether or not the record has absolute timing. In general, QA-class records are the best and can be used for any studies. QB-class records are the next best, except most of them do not have absolute timing. QC-class records cover the principal strong motions but may not have adequate pre-event data and/or post strong-motion data. QD-class records have some defects; they are included here for completeness and should not be used for most studies. Since most A800 accelerographs have a collocated A900 or A900A accelerograph, the user should use the A900 or A900A data files whenever possible.

There are a readme file and six subdirectories containing the data files described in our article on the attached CD-ROM, under the directory of \LeeWHK: (1) readme.txt: an ASCII text file of this Short Note and additional explanations. (2) DOCfiles (subdirectory): documentary files in PDF format for viewing, and some files in ASCII text format for use in data processing. User should view or print the Reportxx.pdf files which describe the Chi-Chi strong-motion data set in details (xx is a number from 01 through 25). (3) Software (subdirectory): containing computer programs from the accelerograph manufacturers for viewing and converting the original recorded data; they are grouped by manufacturer. (4) ORGfiles (subdirectory): the original recorded data files grouped by accelerograph types; these files are for archival purposes only. (5) SUDfiles (subdirectory): the processed strong-motion data files in PC-SUDS format, and are grouped by quality class. (6) ASCfiles (subdirectory): the processed strong-motion data files are in ASCII text format and are grouped by quality class. (7) SACfiles (subdirectory): the processed strong-motion data files are in SAC format and are grouped by quality class. Within each quality class, the data are given by station. Each station has two files—xxx.pdf for viewing the three-component strong-motion data, and xxx_SAC.zip, a WINZIP file containing three SAC data files corresponding to the three components of the recorded acceleration. We use “xxx” here to denote the station name.

References

Lee, W. H. K., T. C. Shin, K. W. Kuo, K. C. Chen, and C. F. Wu (2001). CWB Free-Field Strong-Motion Data from the 21 September Chi-Chi Earthquake: Processed Acceleration Files on CD-ROM, Strong-Motion Data Series CD-001, Seismological Observation Center, Central Weather Bureau, Taipei, Taiwan.

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