

2000 SCEC Annual Report

Project Title: Strong Motion Database

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The Strong Motion Database (SMDB) is a relational database that is a project of the Southern California Earthquake Center and has been in operation at the Institute for Crustal Studies at the University of California, Santa Barbara since 1997. Through a searchable web interface, the database allows the user to select, view and download the strong-motion records of a number of agencies, including the US Geological Survey, California Division of Mines and Geology (CDMG), University of Nevada, Reno, and Kyoshin Net in Japan. Currently the database contains 143 earthquakes, 952 stations, and 1796 site records.

In 2000, the Institute lost its previous full-time programmer and database administrator, Grant Lindley, but the Institute recently hired Melinda Squibb, who has assumed the administration and programming duties for the database. Nonetheless, the database has been used extensively this last year, as can be seen in Table 1:

Year	Usage	
	Web Pages Displayed	Files Downloaded
2000		
Jan	8163	2144
Feb	7959	675
Mar	10203	2386
Apr	11898	442
May	9527	351
June	8427	3239
July	7590	1340
Aug	8618	1492
Sep	6180	285
Oct	9963	1705
Nov	13526	2156
Dec	15791	966
Total	117845	17181

Table 1

In particular, the Strong Motion Database was used extensively in the preparation of the SCEC Phase III report, including Steidl, J. H. and Lee, Y. (2001), The SCEC Phase III Strong-motion Database, *Bulletin of the Seismological Society of America*, v 90, p. S113-S135 as well as Steidl, J. H., (2001), Site Response in Southern California for Probabilistic Seismic Hazard Analysis, *Bulletin of the Seismological Society of America*, v 90, p. S149-S169.

The Strong Motion Database has also been used as a framework and source for the COSMOS Strong-Motion Database, developed under the aegis of the Consortium of Organizations for Strong-Motion Observation Systems, of which the USGS, CDMG, Army Corps of Engineers and the US Bureau of Reclamation are core signatory members. With the support of these agencies, the database is positioned to become the standard gateway to all US and many international networks of strong-motion data, and to be the reference of choice for strong-motion data for the Advanced National Seismic System. Consequently, we have been positioning SMDB to transform itself into the COSMOS database.

In Figures 1 and 2 we show the use of the SMDB over the past 3 years. In Figure 1, the number of web pages downloaded/month is shown; in Figure 2 the number of megabytes of data downloaded/month is shown. The number of files being accessed has remained somewhat constant. With the introduction of the COSMOS virtual data center, we expect that more and more users will migrate to COSMOS.

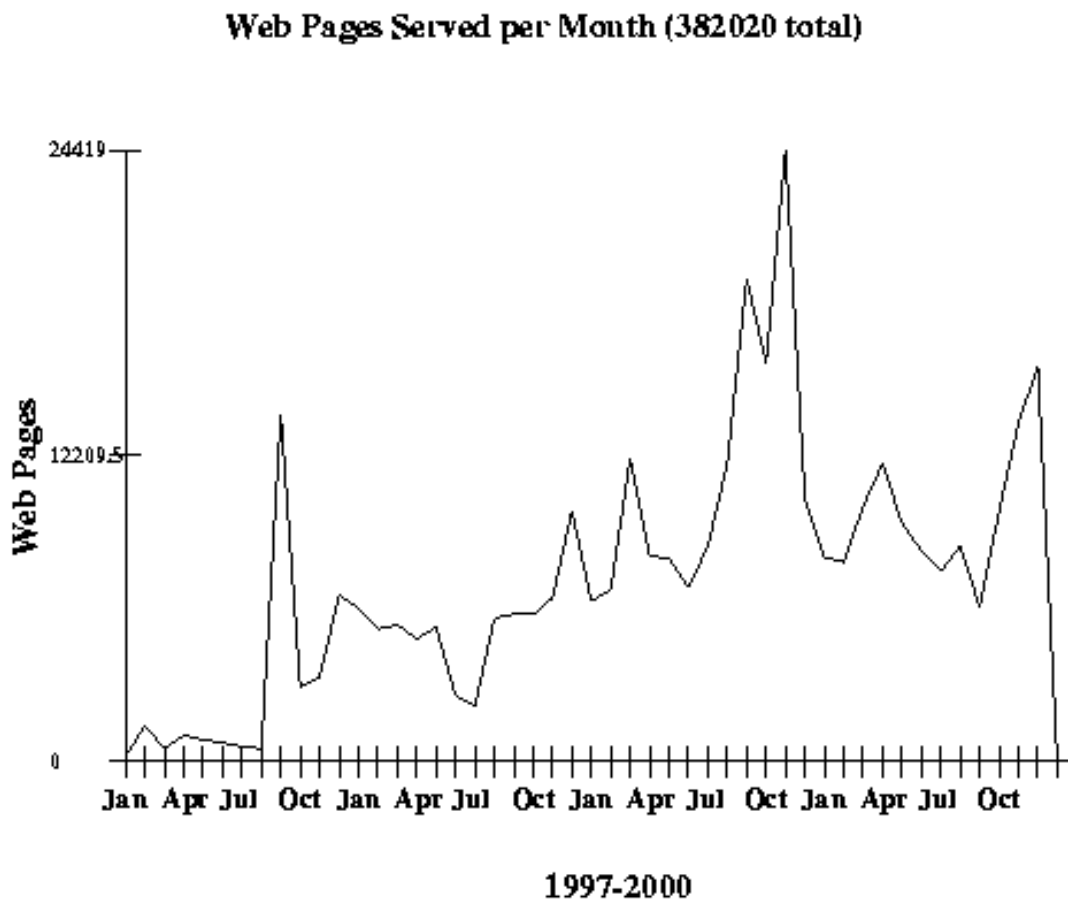


Figure 1: SMDB webpages downloaded by users.

Data Downloaded per Month (11498 MB total)

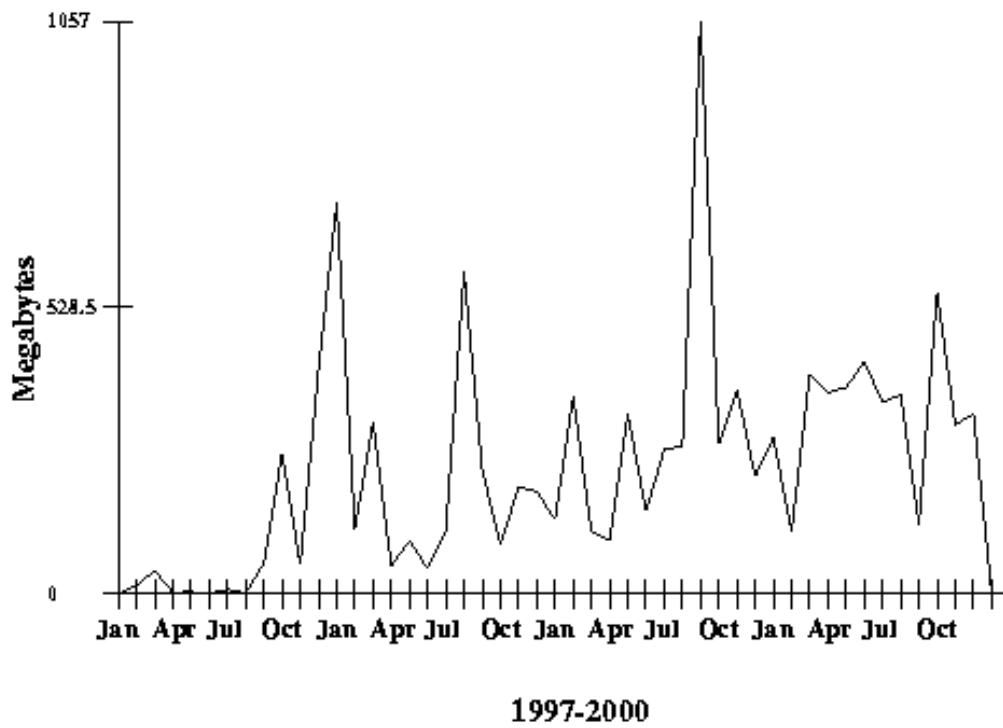


Figure 2: Megabytes of data transferred to users from SMDB.