Installing update r623:

There is a new procedure for obtaining the updated software that includes the revision number. This will allow operators to retrieve a consistent version of the code despite any subsequent work we do on the repository. The procedure is:

    % cd <shake_home>
    % svn –r623 update

There is an additional set of steps with r623 because of changes to the installation macros:

    % cd install
    % make
    % cd ../include

Now edit the file 'macros.' This should be fairly straightforward – all of your previous settings (from macros.BAK) should still work. The final parameter in the file, XML_ENCODING, will default to UTF-8, which should work for most users. See the documentation within the file for more information.

Next, do:

    % cd <shake_home>
    % make

You'll now need to edit 'db.conf,' 'grind.conf,' 'mapping.conf,' and 'db2xml.conf' (if you use db2xml). Your previous versions will exist as <file>.BAK (e.g., grind.conf.BAK). Most parameters will remain the same and you will simply transfer them from your old file to the new one. The specific changes to the configuration files that should be noted are:

- db.conf: This is a documentation change only. Simply restore your original settings.
- grind.conf: 1) The default GMPEs have changed to a more sensible set. Most operators will replace these with their locally-preferred GMPE(s). If you use the defaults, please review the new settings to make sure they are appropriate for your use. 2) The new parameter use_gmpe_sc has been added (see the change notes below), most users will ignore this parameter. 3) The parameter 'qtm_file' now has a value by default (as not having one caused confusion for several new installations). You will want to either a) change the default to whatever is correct for your region, or b) if you are computing Vs30 on the fly with topo2grd, you'll want to delete this parameter. 4) Documentation for gmroi, iroi, gmdecay, and idecay has been improved.
- mapping.conf: Added the parameter gmt_border_level (see change notes below). Everything else will remain the same.

- db2xml.conf: This is a new configuration file. Please see the documentation within the file for setup instructions. This is only necessary if you use db2xml to retrieve amplitude data from an AQMS database.

If you did not update to the previous version (r522), additional work on configuration files may be required. Please see the announcement of r522 for additional details. If you don't know what revision you are running, go to <shake_home> and run 'svn info'.

Update r623 in brief:

- The XML encoding declaration at the top of the output XML files is now configurable. This change is to support some character sets that do not work well with UTF-8 (such as certain Spanish-language characters that include tildes). The parameter XML_ENCODING in <shake_home>/include/macros sets the encoding (UTF-8 by default). ISO-5589-1 works well for Spanish, but other choices may work better for other languages. Most users will not need to change this setting, but the added parameter does require a couple of extra installation steps (see above).
- You may now include a fault reference in the comments of your input *_fault.txt files, and the reference will appear in the "fault_ref" tag in info.xml. The beginning of a reference is noted by a comment line of the form "# Source: <ref>" where <ref> is the reference to the fault model's origin. References can continue across multiple comment "#" lines, and are terminated by 1) an empty comment line, 2) a blank line, or 3) the beginning of data. Example:

  # Source: Jackson and Smith (2010)
  # BSSA, Vol 102, no 6, pp 411-521.
  181.5 35.4 6.2
  …

  References that continue across multiple lines will be joined by a single space in info.xml.
- The previous limit on making maps between 60N and 60S latitude has been extended to 90N to 60S.
- Added ESRI raster files (.fit) as output product. (See ESRI documentation for the specifications and handling of these GIS files.) One set of .fit files is produced for each ground motion parameter, and all the files are compressed into a file called "raster.zip." The file appears on the downloads page of the web site.
- Added timestamp to various logging statements (Bob D.).
- db2xml can now use one of three query modes that may help with database replication delays and other multiple-database problems. See the documentation in the new config file db2xml.conf. db2xml also now uses a flexible list of valid
- Added gmt_border_level parameter to mapping.conf. This parameter allows the operator to select a different level of political boundaries drawn by pscoast. While the default political boundaries are acceptable for most regions, in some countries

too many sub-regions (e.g., states, counties, prefects) are drawn. See the documentation in mapping.conf.

- Added use_gmpe_sc parameter to grind.conf. The default (false) preserves the previous behavior; setting this parameter to true forces grind to use the GMPE-native site corrections (i.e., the same result as would be obtained by using the command line flags –gmpesc or –nativesc). See grind.conf for more information.
- The GMPE "A10Hawaii" produced erroneous results at zero source distance. That has been fixed.
- Added command line flag –bounds to mapping. This flag allows the operator to specify a sub-region (of the region mapped by grind) for the production of maps and other downstream products. This allows the operator to produce ShakeMaps focused on a specific region that may be some distance from the source. Note that this is an either/or proposition: the maps will cover either the full area or the sub-area, not both.
- topo2grd now produces more useful messages on failure.
- Fixed a problem that prevented 'transfer –permweb' and 'pending' from working.
- Added ShakeMap software version identifier. This version is 3.5.623, for example. The revision number is listed in the file <shake_home>/lib/shakemap.revision. The revision is also listed in info.xml for each event.
- plotregr now plots points at more-correct distances for GMPEs that work differently depending of whether a fault or simple hypocenter is supplied. Also, the +/- sigma lines are plotted for all parameters and regardless of whether or not outlier flagging is used.
- Added TA12_mmi IPE. (TA09_mmi still exists, but is deprecated.) This version of Allen et al. (2012) IPE implements the site corrections using the topographic slope terms identified in the source paper. For ShakeMap implementation, Vs30 is converted to equivalent topographic slope. A minimum Vs30 of 190 m/s is enforced per recommendation by Trevor Allen (per. comm.).
- Modified WGRW11 GMICE to limit mimimum and maximum distances used for residual correction to 10 km and 300 km, respectively. This avoids over-correction at small distances (that were not adequately sampled in Worden et al. (2012)) and absurd results at very large distances.
- Fix small-distance bug in Kanno2006 GMPE.
- **Change to behavior of –nativesc/–gmpesc.** Formerly, if a GMPE (or IPE) did not have native terms for site amplification, and grind was called with –gmpesc (or –nativesc), the program with exit with and error. This was deemed undesirable. The new behavior is to continue running, but no site amplifications are performed. (This is a non-ideal solution, but the alternative – using the Borcherdt-style corrections – has its own problems.) This affects GMPEs (and IPEs) that do not have native site terms: Youngs97, Garcia05, AW07, APPEN_table, ALPI_ORIEN_table, ALPI_OCCI_table, and some others.
- Numerous other bug fixes and enhancements (see change_log.txt).