

Information and Instructions for the Excel file “CT calculator”

The CD contains an Excel spreadsheet called “CT calculator”. This is a simple one-page spreadsheet which calculates a contingency table and scores from data input by the user. It is intended to be used in association with the Events table that is filled out as part of the reporting requirements of the SWFDP. Once there are at least 10 severe weather events and/or forecasts accumulated from the quarterly reports, then it is suggested that a contingency table be computed along with appropriate scores. Brief instructions for entering data are given on the spreadsheet itself in column A; more detailed instructions are contained in this document.

The Table contained on the CD has been loaded with a rainy season dataset from Botswana, since an earlier version of the Excel file was used in the Southern Africa SWFDP. The Botswana data was one of the most complete datasets received in the quarterly reports from that project, and thus forms a good example of the use of the events table.

The information from the events table will need to be transferred manually to the CT calculator worksheet. It is suggested that this be done each time the events table is updated. As events are added, the contingency table will be automatically updated. When the number of cases is small, this will produce some weird results in the scores; these are not significant and should be ignored. As the total number of cases increases, the score values should settle down to something more meaningful.

As the spreadsheet is currently set up, “Yes” or “No” should be entered into the Forecast (column D) and Observed (Column E), according to whether the event was forecast or not, and whether it occurred or not. The spreadsheet converts these to the binary representation in Columns F and G.

In the events table, the first row which applies to each event contains the observation and the forecast of the event. The observation of the event is indicated by a “1” in column G if the severe event occurred and “0” if it didn’t. Column H indicates the forecast, “1” if a warning was issued for the area where the event occurred before it started, and “0” if not. These can be transferred directly to the CT calculator: Events table Column G (obs) values go to CT table column E, 1=“Yes” and 0=“No”; and Events table Column H (forecast) values go to CT column D, 1=“Yes” and 0=“No”.

Alternatively, the 1’s and 0’s of the events table can be transferred directly to the CT calculator, Column G value to Column G value, and column H to column F. Entering the data directly into columns F and G of the CT calculator will overwrite the equations that link those columns to the entries in Columns D and E, so that the data entry will always need to be done by entering binary values into columns F and G. For this reason it is advisable to keep a copy of the original spreadsheet with the equations linking column D to F and E to G for future use.

Once all the data from the Events Table has been added, then the number of correct negatives needs to be computed and these non-events added to the spreadsheet. One “non-event” should be counted for

each day during the verification period where there was no severe weather reported and none was forecast. For example, if severe weather occurred on 10 days during a three month period (91 days) then $91-10=81$ non-events should be recorded in the spreadsheet. This is done by adding "no" to both forecast and observation columns D and E for the next 81 rows. Or, by entering "0" in both the forecast (col. F) and observed (col. G) in the next 81 rows.

Finally, make sure that any other data is erased from columns D, E, F and G of the spreadsheet.

This is the basic data required to operate the spreadsheet: The computation of hits, misses false alarms and correct negatives, and the scores listed to the right of the data all use the data in columns F and G. The totals of hits, false alarms, misses and correct negatives are computed and shown in row 1 of the respective columns. The sums are set for a maximum of 200 cases; if the dataset is larger then it will be necessary to change the equation behind each of the cells H1, I1, J1 and K1 to reflect the larger number of cases.

The sums are then transferred automatically to the contingency table at the right of the data, and scores are computed from this table using the equations in the verification document, and displayed immediately under the table.

Columns B and C contain the event sequence number and the date. This is useful for identification purposes, to keep track of the severe weather events, but these columns are not used in the computation, and can be left blank if desired.

If by some chance the table doesn't automatically recompute after the data is added, then check that the "calculation options" function on the menu is set to "automatic". If it is on manual, then press F9 to recompute the sheet.