

Spreadsheet Information (Second Edition)

Download Advice

The file should download with a long hexadecimal file name ending with a .XLS extension. Apologies for the awkward name. If asked, you should enable Editing. Please save the spreadsheet with a new name to suit you.

Background

The spreadsheet described here was used to produce the graphs in the **First Edition of the book**. This book has since been reissued as a second edition with an amended spreadsheet. Each book contains descriptions of modelling and the spreadsheet containing the modelling. You should refer to the appropriate edition of the book to understand how the models work.

Strengths of this model

Improvements over the first Edition:

- It has been updated following the reissue of the 2021 IPCC Report (AR6)
- It deals with the greenhouse gas Ozone
- It deals with the Global Energy Imbalance and the effects of the Oceans
- The Control Panel Tab is improved with a more intuitive feel
- Control of Aerosol and Albedo effects is explicit – Albedo Feedback extends to future years
- The format of the spreadsheet has been improved to improve useability
- Overall, the approach is more comprehensive
- It's Free - whilst I retain my copyright

Limitations

- Please bear in mind it is a working example not a commercial product
- Whilst respecting the physics, it is intended to be illustrative not definitive

Following the Descriptions in the book

If you want to run through the book whilst using the spreadsheet, you can use the following sequence.

1. On the **Auto Chart Tab**, turn off all of the optional climate effects:
 - a. Aerosol Effects
 - b. Atmospheric Temperature Feedback
 - c. Other Feedback terms
 - d. Surface Albedo Feedback
 - e. Deep Ocean Storage

Note:

Controlling these features is done by clicking on blue boxes with red 'on' text to reveal a list box. Select 'off' from the list box in each case.

2. On the **Control Panel Tab** select '**Try 3.62% 1890 Reference**' using the 'radio buttons'.
3. This takes you to the first example given in the book. On the Auto Chart Tab you can view the resulting graphs for this and other examples
4. Repeat this for:
 - a. 'Try 2.705% 1890 Reference'
 - b. 'IPCC CO2 Only1890 Reference'
 - c. 'All WMGHG 1890 Ref.'
5. At this point you can successively introduce the options for:
 - a. Aerosol Effects
 - b. Atmospheric Temperature Feedback
 - c. Other Feedback terms
 - d. Surface Albedo Feedback
 - e. Deep Ocean Storage

Experimenting

If you adjust the details of the spreadsheet you will need to remember that the '**Control Panel Tab**' contains a list box to 'Reset' and 'Run' the iterative model. This enables you to recover if your changes cause the model to crash.

Note:

The spreadsheet depends on enabling 'Iterative Mode' as a calculation option. This is enabled when the spreadsheet is loaded. Sometimes Excel may revert to its default and you may need to select File > Options > Formulas > Calculation Options. To re-enable this option.