Using BIBTEX for AGU Publications

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September 26, 2008

Abstract

In 2003, the AGU contacted me about creating a set of BIBTEX style files for both the old and new AGU bibliography styles. A major change was about to be made for all publications appearing in 2004 and later. So two sets were needed, for 2003 and earlier, and for 2004 and after. Since I had created (unofficial) BIBTEX files for the AGU already, I was the obvious candidate for this task.

Now, five years later, some bugs have been discovered that need to be fixed. Problems had arisen in the ordering of multi-author references with the same first author and year. The new versions should clear these up.

The new files bear the suffix `08` (version 2008) to distinguish them from the previous `04` versions; the pre-2004 files contained no numerical suffix. *Since both these sets are obsolete, their distribution has been discontinued.*

There are two variants to the AGU BIBTEX style files:

`agu08.bst` limits the number of authors in the list of references to a maximum of 9: for 10 or more authors, the list is reduced to the first author and *et al.*

`agufull08.bst` retains the full author list, no matter how many are present.

This little article is a brief manual for using the AGU BIBTEX styles, showing how they differ from the standard ones. The main difference is two new items to be included in the BIBTEX database file. A sample database file and its results are also listed.

Citations of Electronic Publications

With the introduction of electronic publications, new entries are needed in the list of references to specify these items. These entries do not exist in the traditional BIBTEX style files and thus need to be added in a consistent manner.

Online pages are normally identified by their Internet address, or *url*; however, these are usually of a transient nature, changing every few years when the host computer is upgraded. What is needed is a more robust electronic designation. This is fulfilled by the *Digital Object Identifier* or DOI. It consists of a fixed code for the publisher (10.1029 for AGU publications) plus a slash followed by a unique identifier for that object. Different publishers create this identifier differently: for some it looks much like the traditional reference (journal-vol-page) while AGU uses the original manuscript number.

A url link to the object can always be made by placing `http://dx.doi.org/` in front of the DOI.

All this may be useful for locating documents online, but journal articles are still printed on paper. Some means must be kept to locate the paper versions too. Traditionally this was the volume and page number. However, the concept of page number no longer exists for electronic publications. So what does one do when the articles appear both electronically and in print? The answer is to specify a *sequence number* which gives the article's relative position within a bound volume. (Volume number is retained.) This item replaces *page number*, but its name has still to be standardized. It is called *citation number*, or *article number*, or *electronic ID*. Whatever it is called, it is essential to find the printed article, and thus must be included in the reference, just like page numbers in the non-electronic age. The DOI is really an optional feature, permitting a robust url to be created. However, the AGU considers the DOI too to be an essential item in the reference.

See `http://www.agu.org/pubs/reports/eos13aug.htm.` for a description of the AGU citation policy.

Doing it with BIBTEX

The standard BIBTEX style files do not provide any support for DOI or electronic sequence number. However, any style files created with my style-file generation program `custom-bib` should contain these additional fields. (That is, the newer ones at least.) Since `custom-bib` is the most convenient method of generating new bst files, it is to be hoped that these fields will become standard.

The extra fields are:

doi to enter the DOI number (without the "doi: " prefix, which is added automatically by the style;

eid to enter the *citation number*, or *electronic identifier*. This field was originally added at the request of the American Physics Society and hence the name was fixed by them.

There is a guideline from the AGU for producing the reference lists (`http://www.agu.org/pubs/AuthorRefSheet.pdf`, updated Jan. 6, 2004) and my BIBTEX styles will reproduce it.

I highly recommend that you include the standard package `url` by Donald Arseneau. My `agu08.bst` and `agufull08.bst` will use it to split the long DOI number over a line, without adding a hyphen.

The bibliography style files

There are two `bst` files available, `agu08.bst` and `agufull08.bst`. They produce identical formatting results, except that the first will truncate the list of authors if it exceeds 9, printing only the first author *et al.* The second file, `agufull08.bst` always outputs the entire list of authors.

These replace the files `agu04.bst` and `agufull04.bst` which produce essentially the same formatting, but contain some bugs regarding the ordering in the list of references.

The even older files `agu.bst` and `agufull.bst` produce the format used by AGU prior to 2004 and are therefore obsolete.

The order of references

The normal order for entries in a bibliography is alphabetical by authors. The AGU requires a modification of this, one that is appropriate to the author–year citation style used. Essentially they are ordered by the citation text. Thus *Smith* comes before *Smith and Jones*, which comes before *Smith et al.*, even if the *et al.* is really *Allen, . . .* , which would come before *Smith and Jones* in a strictly alphabetical scheme. In the case of duplicate author citation text, the works are ordered by year. For duplicate author text and year, the letters *a, b, . . .* are appended to the years.

For example:

> Smith, A. (1989a) . . .
> Smith, A. (1989b) . . .
> Smith, A. (1991) . . .
> Smith, A. and C. Allen (1995) . . .
> Smith, A. and B. Frank (1992) . . .
> Smith, A. and B. Frank (1997) . . .
> Smith, A., L. Roberts, and T. Jones (1993) . . .
> Smith, A., T. Jones, and L. Roberts (1997) . . .

All this is done automatically by the BIBTEX styles.

However, there are still some ambiguous situations which are now better resolved with the 08 versions.

- Two different first authors with the same surname but different initials are treated as different people. May same logical, but the 04 versions did not do this. This can have the result that the *a* and *b* entries are separated. For example, Smith, B. (1989c) would appear *after* all the Smith, A. entries.

A negative side-effect here is that if the first author appears sometimes with full initials (Daly, P. W.) and at other times with just one initial (Daly, P.), these entries will be treated as different people. However, I contend that at least the first author should always have his or her name entered in the complete form.

Note that even if the full first names are given in the database, they are truncated to initials in the output, and that is what counts. Thus *Patrick W. Daly* and *P. William Daly* and *Paul Willis Daly* will all be considered to be the same person: Daly, P. W.

- Multi-author papers with the same first author and year were ordered by the coauthors in version 04; if all authors were the same, they were then ordered by the citation key, the argument in the \cite commands. This meant that papers in a set (Paper I and Paper II) did not necessarily appear in their logical order if the authors were permuted, as is often the case.

The new rule now used by the 08 files is that multi-author papers with the same first author and year are listed *in the order in which they are first cited in the text.* This would hopefully be the logical order. And if the author really wants to cite Paper II before Paper I, s/he may still get the correct listing order with \nocite to "cite" Paper I without any output.

A sample bib file

Here is a sample BibTeX file containing most of the references in the AGU example. Note the use of the eid and doi fields in the first entry.

The resulting list of references is shown afterwards.

```
This is a test bib file for AGU
It contains all the examples from the
AuthorRefSheet.pdf, January 6, 2004

The fields EID and DOI are new, and are not yet standard for
all BibTeX files, but I hope they will be soon.

EID is what AGU calls "citation number" and what other publishers
 call "sequence number". It replaces the page number for electronic
 journals.

Recall rules for title: words that are always to be capitalized are
   placed in {Curly Braces} while other words should be capitalized
   as they would be printed for those journals that like capitalized
   titles; for other journals, like AGU, these words will be set in
   lower case.

These rules do not apply to BOOKTITLE, which is printed as is.

The first letter of a note text will also be set in lower case, unless
  placed in curly braces.

@ARTICLE{liu2004,
  AUTHOR = "Liu, H.-L. and J. W. Meriwether",
  TITLE  = "Analysis of a Temperature Inversion Event in the Lower Mesosphere",
  JOURNAL = "J. Geophys. Res.",
  VOLUME = "108",
  doi = "10.1029/2002JD003026",
  eid = "D02S07",
  YEAR = "2004",
  note = "in press"
}

Field entries can be in quotes as above or in curly braces.
```

```
@TECHREPORT{mon1994,
  AUTHOR =       {J. W. H. Monger and J. M. Journeay},
  TITLE =        {Guide to the Geology and Tectonic Evolution of the Southern {Coast Mountains}},
  INSTITUTION =  {Geol. Surv. of Can.},
  YEAR =         {1994},
  type =         {Open File Rep.},
  number =       {2490},
  address =      {Ottawa, Ont.},
  pages =        {77},
}

@TECHREPORT{sch1997,
  AUTHOR =       {Schiarizza, P. and R. G. Gaba and J. K. Glover and J. I. Garver and P. J. Umhoefer
  TITLE =        {Geology and Mineral Occurrences of the {Taseko-Bridge River} Area},
  INSTITUTION =  {B. C. Minist. of Employ. and Invest., Energy and Miner. Div., Geol. Surv. Branch},
  YEAR =         {1997},
  type =         {Bull.},
  number =       {100},
  address =      {Vancouver},
  pages =        {291},
}

@BOOKLET{cam1970,
  author =       {Campbell, J. K.},
  title =        {{Mariner Mars} 1969, Report},
  howpublished = {Jet. Propul. Lab.},
  address =      {Pasadena, Calif.},
  year =         {1970},
}

@TECHREPORT{kin1992,
  AUTHOR =       {J. J. Kineman and M. A. Ohrenschall},
  TITLE =        {{Global Ecosystems Database}, version 1.0, {A} Documentation Manual {[CD-ROM]}},
  INSTITUTION =  {Natl. Geophys. Data Cent.},
  YEAR =         {1992},
  type =         {Key Geophys. Rec. Doc.},
  number =       {27},
  address =      {Boulder, Colo.},
}

@TECHREPORT{bro1967,
  AUTHOR =       {R. J. E. Brown},
  TITLE =        {Permafrost in {Canada}},
  INSTITUTION =  {Geol. Surv. of Can.},
  YEAR =         {1967},
  type =         {Map},
  number =       {1246A},
  address =      {Ottawa, Ont.},
}

@MASTERSTHESIS{hen2000,
  AUTHOR =       {T. Henderson},
  TITLE =        {High-Pressure Metamorphism in the western {Llano} Uplift},
  SCHOOL =       {Univ. of Tex. at Austin},
  YEAR =         {2000},
  type =         {{M.S.} Thesis},
  address =      {Austin},
```

```
  month =         {28 June},
  pages =         {134},
}


@misc{hod1994,
  AUTHOR =   "D. A. Hodell and R. H. Benson and D. V. Kent",
  TITLE =    "{Carbon Calcium Database}, paleo@mail.ngcd.noaa.gov",
  howpublished = "Natl. Geophys. Cent., Boulder, Colo.",
  year = "1994",
}



@ARTICLE{bud1998,
 AUTHOR = "Budetta, G. and D. Carbone",
  TITLE = "Temporal Variations in Gravity at {Mt. Etna} ({Italy}) Associated
           with the 1989 and 1991 Eruptions",
  JOURNAL = "Bull. Volcanol.",
  VOLUME  = "59",
  YEAR    = "1998",
  pages   = "311-326"
}

@ARTICLE{ma2003,
  AUTHOR =        "J. Ma and D. W. Waugh and A. R. Douglass and S. R. Kawa
                   and S.-J. Lin",
  TITLE =         "Evaluation of the Transport in the {Goddard
                   Space Flight Center} Three-Dimensional Chemical
                   Transport Model using the Equivalent Length Diagnostic",
  JOURNAL =       jgr,
  YEAR =          "2003",
  volume =        "108",
  number =        "D6",
  doi    =        "10.1029/2002JD002268",
  eid    =        "4201"
}

@ARTICLE{Brophy1999,
  AUTHOR =        "J. G. Brophy and E. M. Klein and M. A. Stewart",
  TITLE =         "Textural ({Nomarski} Interferometry) Studies of Plagioclase
                   Phenocryst Zonation Styles in {MORB} Dikes and Lavas from
                   the North Wall of the {Hess Deep Rift}",
  JOURNAL =       "Eos Trans. AGU",
  YEAR =          "1999",
  volume =        "80",
  number =        "46",
  note =          "{Fall} Meet. Suppl., F985",
}

@ARTICLE{Morrill2001,
  AUTHOR =        "J. C. Morrill  and R. C. Bales and M. H. Conklin",
  TITLE =         "The Relationship Between Air Temperature and Stream Temperature",
  JOURNAL =       "Eos Trans. AGU",
  YEAR =          "2001",
  volume =        "82",
  number =        "20",
  note =          "{Spring} Meet. Suppl., Abstract H42A-09",
}
```

```
@BOOK{Gaines1992,
  editor =        "Gaines, S. and P. Hataway and S. Hipskind",
  TITLE =         "Airborne Arctic Stratospheric Expedition II",
  PUBLISHER =     "NASA Ames Res. Cent.",
  YEAR =          "1992",
  address =       "Moffett Field, Calif.",
  note =          "{CDROM NASA/UARP-004}",
}

@BOOK{McDougall1999,
  editor =        "McDougall, I. and T. M. Harrison",
  TITLE =         "Geochronology and Thermochronology by the $^{40}$Ar/$^{39}$Ar Method",
  PUBLISHER =     "Oxford Univ. Press",
  YEAR =          "1999",
  address =       "New York",
  edition =       "2nd",
  pages  =        "269",
}

@INCOLLECTION{Sweet1958,
  AUTHOR =        "P. A. Sweet",
  editor =        "B. Lehnert",
  TITLE =         "The Neutral Point Theory of Solar Flares",
  BOOKTITLE =     "Electromagnetic Phenomena in Cosmic Physics",
  pages =         "123-134",
  PUBLISHER =     "Cambridge Univ. Press",
  address =       "New York",
  YEAR =          "1958",
}

@INCOLLECTION{Scholz2004,
  AUTHOR =        "Scholz, C. H. and T. C. Hanks",
  TITLE =         "The Strength of the {San Andreas} Fault: A Discussion",
  BOOKTITLE =     "Rheology and Deformation of the Lithosphere at
                   Continental Margins",
  PUBLISHER =     "Columbia Univ. Press",
  YEAR =          "2004",
  editor =        "G. D. Karner and others",
  address =       "New York",
  note =          "in press",
}

@INCOLLECTION{Tullis1986,
  AUTHOR =        "T. Tullis and J. Tullis",
  TITLE =         "Experimental Rock Deformation Techniques",
  BOOKTITLE =     "Mineral and Rock Deformation: Laboratory Studies",
  volume =        "36",
  series =        "Geophys. Monogr. Ser.",
  PUBLISHER =     "AGU",
  YEAR =          "1986",
  editor =        "B. E. Hobbs and H. C. Heard",
  pages =         "297-324",
  address =       "Washington, D.C.",
}

@UNPUBLISHED{Englemann1986,
  author = "Englemann, R. J. and R. W. Perkins and D. I. Hagan
            and W. A. Haller",
```

```
    title = "Washout Coefficients for Selected Gases and Particulates",
    note =  "Paper presented at 59th Annual Meeting, Air Pollut.
             Control Agency, San Francisco, Calif., 20--24
             June",
    year =  "1986"
}
```

References

This is the result of processing the above sample `bib` file with `agu08.bst`.

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Campbell, J. K. (1970), Mariner Mars 1969, report, Jet. Propul. Lab., Pasadena, Calif.

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Henderson, T. (2000), High-pressure metamorphism in the western Llano uplift, M.S. thesis, Univ. of Tex. at Austin, Austin.

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McDougall, I., and T. M. Harrison (Eds.) (1999), *Geochronology and Thermochronology by the $^{40}Ar/^{39}Ar$ Method*, 2nd ed., 269 pp., Oxford Univ. Press, New York.

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