`ClimGen` output file naming system, v1-02

From version 1-02 onwards, a new, more informative, naming system is being used for identifying the output files from `ClimGen`. Filenames have 95 characters (98 if gzip'd, due to the trailing '`.gz`'); duplicates are preserved by appending `.nnn`, making the length 99 characters (102 if gzip'd). See the layout below, with structure for a scenario file and for an observations file.

```
.........1.........2.........3.........4.........5.........6.........7.........8.........9....9
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890012345
<v>_pat<pattinfo------------------->_dt<dtinfo>_<perinfo-->_<sinfo>_reg<reginfo------->.climgen
<v>_obs<obsinfo---------------------------->_<perinfo-->_<sinfo>_reg<reginfo------->.climgen
```

Explanation of components and examples of content:

`<v>`
> 3-character indication of variable:
>> `tmp` = mean temperature

`<pattinfo>`   (for scenarios)
> 29-character indication of the source of the climate change pattern, covering source archive, source model (i.e., which GCM, RCM etc.), and model simulations from which the pattern was diagnosed. Suggested structure is:
>
> source archive (5 characters):
>> `CMIP3`
>> `LINK_`
>> `DDC__`
>
> source model (15 characters):
>> `bccr_bcm20_____`
>> `cccma_cgcm31t63`
>> for CMIP3, use CMIP3 filenames with all '_' removed except for that separating institution from model
>
> source simulations (9 characters):
>> `A2A1B____`
>> `A2_____`
>> `A1B_____`
>> `A1FA2B2B1`

`<obsinfo>`   (for observations)
> 40-character indication of observational archive used:
>> `cru_ts_2_10_____`
>> `cru_ts_3_00_____`

`<dtinfo>`
> 8-character indication of the global-mean temperature change being used to create the scenario. Suggested structure is:
>
> fixed/transient (1 character):
>> `f` = fixed during the scenario period, being equal to the mean global-mean temperature over the time period for which the scenario is generated
>> `t` = transient during the scenario period
>
> scenario (4 characters):
>> `nnnn` = prescribed, fixed temperature change × 100 (e.g., `0050` = 0.5 K)
>> `A1FI`
>> `A1B_`
>
> model (3 characrers):
>> `AG1` = the actual GCM (same as used for the patterns) simulation for this scenario
>> `AGM` = the mean of all GCMs in the same archive for this scenario

> `MG1` = MAGICC tuned to the actual GCM used for the patterns, then run for this scenario
>
> `MGM` = the mean of MAGICC simulations for this scenario with tuning to all GCMs in the same archive
>
> `MLL`, `MLM`, `MML`, `MHH`, etc. = MAGICC with low, medium and high options for climate response and for carbon-cycle feedback strength, or any other options according to the data base of global-mean temperatures available within `ClimGen`.

`<perinfo>`

11-character indication of the period covered and the temporal averaging applied:

> `20392054ann` = one value per year, from 2039 to 2054 inclusive
>
> `20102099dec` = non-overlapping decadal means from 2010 to 2099
>
> `20102099y30` = non-overlapping 30-year means from 2010 to 2099
>
> note that the last 3 characters are read from the user-provided `slice.spec` file.

`<seinfo>`

7-character indication of the output months and seasons, read from the user-provided `seas.spec` file:

> `monthly`
>
> `seasons`
>
> `jja____`

`<reginfo>`

16-character indication of the region(s) covered within the output file, read from the user-provided `space.spec` file:

> `landboxes_____`
>
> `allboxes_____`
>
> `england_____`
>
> `105E115E30N60N__`

Examples:

`tmp_patCMIP3bccr_bcm20_____A2A1B_____dtf0200____20402069ann_seasons_regcountrymeans____.climgen`

> will contain a future scenario for mean temperature, obtaining using the pattern diagnosed from the CMIP3 simulations under A2 and A1B scenarios with the bccr_bcm2_0 GCM, combined with a fixed global-mean temperature change of +2°C, with seasonal mean time series for the period 2040 to 2069 representing average climate across each country in the world.

`pre_obscru_ts_3_00_____19012005ann_monthly_reglandboxes_____.climgen`

> will contain a precipitation observations from the CRU TS 3.00 data set, with monthly time series for the period 1901 to 2005 for each individual land grid box across the globe.

Caveats:

Note that although the filename structure is fairly comprehensive, it cannot distinguish between all of the wide-ranging output files that `ClimGen` can produce. There are three specific limitations:

(1) The last 3 characters of `<perinfo>` and all of `<seinfo>` and `<reginfo>` are simply labels taken from the first line of the `slice.spec`, `seas.spec` and `space.spec` files. Users are free to enter their own choice of labels, and if they choose to use the same labels in two different specification files, then the filenames will not be able to distinguish which specification file was used to generate which output file. The content of the file will, in most cases, enable such files to be distinguished: the header lines indicates the whether any seasonal or annual means have been calculated, while the individual data blocks indicate the time slices (and hence time resolution) and give some information about the location and/or spatial averaging that was used to produce each block of data.

(2) There is no space in the filename of scenario files to indicate which observational data set was used to provide the inter-annual variability (i.e., anomalies) and for which period. This information is provided on the 5th header line of the file.

(3) There is no space in the filename of the scenario files to indicate which scenario generation method has been used. Currently there is only one method for all variables except `pre`, `wet` and `cld`. For `pre` and `wet`, scenarios can be based on absolute or relative changes, and changes in variability as well as means can be included; for `cld`, scenarios can be based on absolute linear or logistic changes. Information about the method used is provided in the 4th header line of the file.