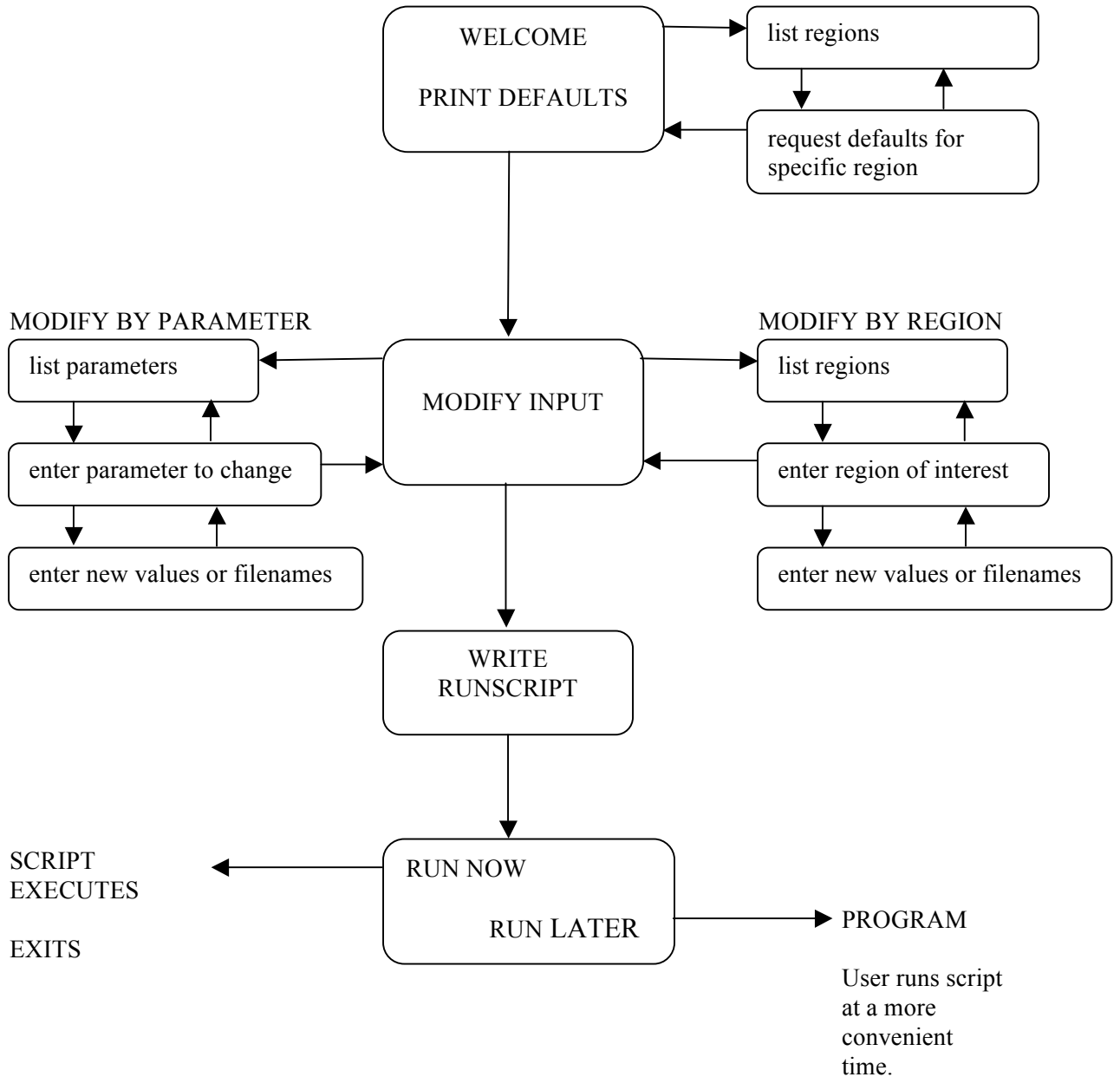


APPENDIX C

Antarctic Paleobathymetry Processing Overview



Regional reconstruction programs are run. Worldwide paleobathymetric gridded datafile is generated. Polar stereographic reconstruction plots are made. Output is placed in /apb/user/"runname". Script exits.

Figure C-1: A schematic diagram of the User Interface, showing the options available to the user and the general sequence of operations.

An Example of a Reconstruction Session

The following example shows the input and output during a typical reconstruction. User input is shown in bold; computer text is standard font.

vema_87: **../prog/apb_main**

Welcome to the Antarctic PaleoBathymetry user interface program. This software allows you to reconstruct paleo-bathymetry of the circum-Antarctic oceans, in steps, back to a target age.

You may accept default data or modify input bathymetry, subsidence rates, stagepoles and the programs used to reconstruct each region. Gridfiles and color image maps are output for each requested age-step.

Be sure your default directory is apb/user

Please enter a <10 character run_name that will be used to create an output subdirectory and to identify files.

example_1

Enter 1 to see default parameters
2 to modify input parameters
3 to set up run-script using default or modified input parameters
<return> to exit

1

To see the values used to compute paleobathymetry for any region, enter the region number from the list below:

Number	Region Name
1	Southeast Indian Abyssal Plain
2	Southeast Indian – West of Kerguelen
3	Southwest Indian
4	Weddell Sea
5	Drake passage
6	N. Bellingshausen Plain
.	.
.	.
.	.
44	W. Indian Ocean (N. of 30°S)
45	E. Indian Ocean (N. of 30°S)
46	Central Indian Ocean (N. of 30°S)
47	S. Central Indian Ocean (N. of 30°S)
48	Indian subcontinent

Enter number for region of interest

7

Default values for region: S. of Chile Ridge

Plate: Antarctic

Bathymetry-sediment-age basefile: plate0o

Binary (b) or text (t) data: b

Stagepole file used: none

Program: dp0c

Sealevel file: sealevel.d

Subsidence rate (m/my** 1/2): 260m/my

Subsidence reference: calculated

enter 1 to see defaults for another region

otherwise, return

<return>

Enter 1 to see default parameters

2 to modify input parameters

3 to set up run-script using default or modified input parameters

<return> to exit

3

For the paleobathymetry computation, reconstruction will start at 0 M. Y.

Enter the end age, and age step in M.Y.(integers)

10 5

processing

chmod a+x example_1_script

mv log_changes example_1_log

mv: cannot access log_changes (note: log file created only when changes requested)

All the preliminary setup is done.

70MB free disk space is required for execution plus 25MB for each age-step' s output files. Each age-step requires several minutes to run

You may allow the program to execute now or exit now and run the script yourself, later.

Enter 1 to continue execution, **<return>** to exit

<return>

To run later, enter:

example_1_script

Any user changes to default values are in file:

example_1_log

As the program output notes, the customized script can be run at a more convenient time. The input and output are shown below.

```
vema_90: example_1_script
cd ../p0
pwd
/scratch/ouzel/ra/apb/p0
gunzip all_georgia_0.dg.gz all_herdman_0.dg.gz ...
etc.
etc. (extensive output to screen, no user input needed)
etc.
final 10 m.y. plot created
rm temp.grd temp.l.grd
end
all plots done:
1s final_10.ps final_5.ps
final_10.ps final_5.ps
```

```
mkdir example_1
mv final_10.grd final_5.grd ./example_1
mv coast_10.dg coast_5.dg ./example_1
mv id_label ./example_1
mv final_10.ps final_5.ps ./example_1
mv example_1_script ./example_1
```

```
.ps .grd script and change_log files copied to ./example_1
End of processing for Antarctic Paleobathymetry
```

Final Postscript map files are created for each timeslice requested. Should the user wish to do additional processing, gridded bathymetry and coast location files are also created and placed in the new subdirectory. Below are the contents of the newly created example 1 subdirectory at the end of the processing shown above. A brief description follows each filename.

```
weasel_31: 1s -l
coast_10.dg      ←coastline file for 10 Ma reconstruction
coast_5.dg      ←coastline file for 5 Ma reconstruction
example_1_script ←script run to produce this output
final_10.grd    ←gridded bathymetry for 10 Ma
final_5.grd     ←gridded bathymetry for 5 Ma
final_10.ps     ←Postscript map for 10 Ma
final_5.ps      ←Postscript map for 5 Ma
id_label        ←runname file used in plot
plot.cpt        ←color file used for map
```