

TM5-MP - Bug #11761

overflow in PDUMP

09/26/2018 09:44 AM - Philippe Le Sager

Status:	New	Start date:	09/26/2018
Priority:	Low	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:		Spent time:	0.00 hour

Description

This issue was already reported when testing the updated polar cap photolysis code (r4981-5). I post it here as a reminder, since it has been a known issue for a long time and I tend to forget this kind of specifics if not written down. I was able to reproduce it with the trunk at both [r899](#) and [r910](#), when running the code compiled with check-all (i.e. -check bounds,uninit -ftrapuv -fpe0), In each cases, it crashes at the same time step.

```
>>> dynamics step from : 2006/01/02 22:40
```

```
>>> dynamics step from : 2006/01/02 23:00
```

```
forrtl: error (72): floating overflow
```

Image	PC	Routine	Line	Source
libintlc.so.5	00002AAAAC315CF1	tbk_trace_stack_i	Unknown	Unknown
libintlc.so.5	00002AAAAC313E2B	tbk_string_stack_	Unknown	Unknown
tm5mp.x	00000000015C49A4	Unknown	Unknown	Unknown
tm5mp.x	00000000015C47B6	Unknown	Unknown	Unknown
tm5mp.x	000000000156C3B9	Unknown	Unknown	Unknown
tm5mp.x	0000000001570DDC	Unknown	Unknown	Unknown
libpthread-2.11.3	00002AAAAD8AC850	Unknown	Unknown	Unknown
tm5mp.x	0000000000CD2F78	mdf_mp_mdf_put_va	22829	mdf.F90
tm5mp.x	0000000001461D62	user_output_pdump	4107	user_output_pdump.F90
tm5mp.x	000000000149020E	user_output_pdump	1122	user_output_pdump.F90
tm5mp.x	0000000001301F45	user_output_mp_us	968	user_output.F90
tm5mp.x	0000000000E6AB0B	modelintegration_	821	modelIntegration.F90
tm5mp.x	0000000000E68F95	modelintegration_	540	modelIntegration.F90
tm5mp.x	0000000001015F82	tm5_mp_tm5_model_	1204	tm5.F90
tm5mp.x	00000000010C6146	MAIN__	63	tracer.F90
tm5mp.x	000000000041021E	Unknown	Unknown	Unknown
libc-2.11.3.so	00002AAAADD52C36	__libc_start_main	Unknown	Unknown
tm5mp.x	0000000000410129	Unknown	Unknown	Unknown

If the user_output_pdump.F90 is not compiled with Intel -fpe0, the temperature written to the file is correct. This was already the case before, but was not documented. Until further notice, the recommendation is: do not use pdump when running a check-all tests. One day run may be ok. Keep in mind **this is for the ECMWF CRAY machine**. Behavior on other platforms is not known.