Some minor bugs have been discovered in Earth-GRAM2007v1.3 that may affect some users. The first involves a discontinuity in the standard deviation of density when using the Range Reference Atmosphere option near the surface. This issue is resolved with the following patch:

In *rramods_E07.f* , change:

```
        If (h.le.z1(nsrf2(isite)))Then
RRAM144a
```

to:

```
        If (h.le.z2(nsrf2(isite)))Then
RRAM144a
```

The second bug appears in the program *gramtraj_E07.f* and causes an inconsistency in the initial values of perturbations, if the initial height (or radius) from Namelist input file is not the same as the initial height (or radius) from the user's program that calls *gramtraj_E07.f* . This issue can be corrected by adding two lines of code:

In *gramtraj_E07.f* , add:

```
        h1 = chgt
GRMT132a
        h = h1
GRMT132b
```

after:

```
        thet = thet1                                                    GRMT132
```

The new program will be designated as Earth-GRAM2007v1.4 and the following changes are used to reflect this within the code:

In gram_E07.f , change:

```
C     Program Earth-GRAM-2007  Version 1.3  Released  Mar, 2009         GRAM  1
```

to:

```
C     Program Earth-GRAM-2007  Version 1.4  Released  Apr, 2009         GRAM  1
```

In *initial_E07.f* , change:

```
     &  23x,'Version 1.3, Released Mar, 2009')
INIT133a
      atmpath = 'D:\EarthGRAM07Ver1.2\PC_IOfiles\atmosdat_E07.txt'      INIT141
      guapath = 'D:\EarthGRAM07Ver1.2\GUACAdata'                        INIT142
      rrapath = 'D:\EarthGRAM07Ver1.2\RRAdata'                          INIT148
```

to:

```
     &  23x,'Version 1.4, Released Apr, 2009')
INIT133a
      atmpath = 'D:\EarthGRAM07Ver1.4\PC_IOfiles\atmosdat_E07.txt'      INIT141
      guapath = 'D:\EarthGRAM07Ver1.4\GUACAdata'                        INIT142
      rrapath = 'D:\EarthGRAM07Ver1.4\RRAdata'                          INIT148
```

As an alternative to modifying your existing code, requests for Earth-GRAM2007v1.4 can be directed to:

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