Contents

Usage of CRG_EXT_BANKING and CRG_EXT_SLOPE

Introducing the usage of crg_ext_banking and crg_ext_slope. Examples are included. The file comments are optimized for the matlab publishing makro.

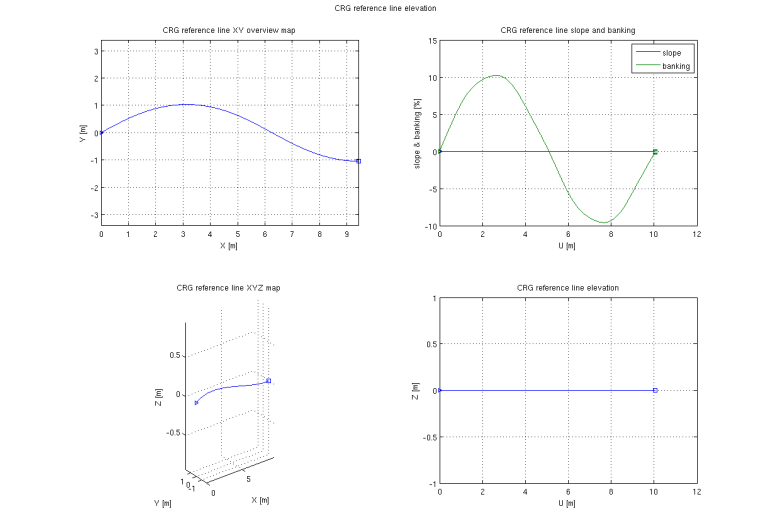
Test proceedings

- load demo/real file
- extract banking/banking
- display result

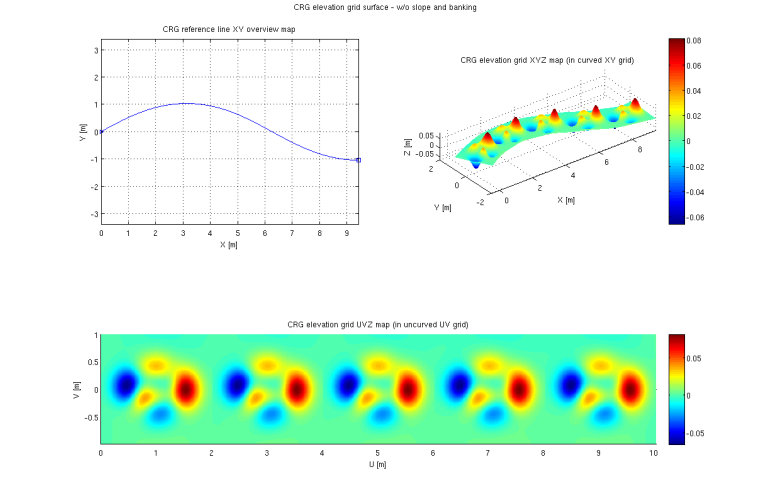
```
% DEFAULT SETTINGS
% clear enviroment
clear all;
close all;
```

Test1 (extract banking incl. smoothing)

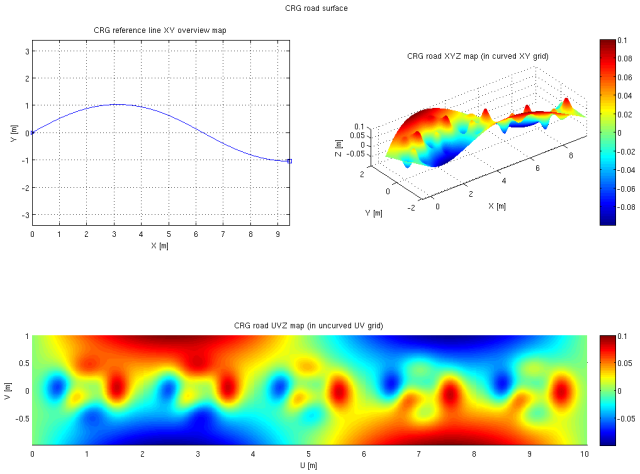
```
dat = crg_read('demo7.crg');

exdata = crg_ext_banking(dat, 0.0000003);

crg_show_refline_elevation(exdata);
crg_show_elgrid_surface(exdata)
crg_show_road_surface(exdata);


ans =

      head: [1x1 struct]
      mods: [1x1 struct]
      opts: [1x1 struct]
        ct: {'CRG defined by z matrix'  '... and unevenly spaced v vector'  '... with curved
    struct: {'* written by crg_write at 2011-06-07 09:51:51'  '* written by ipl_write at 201
    filenm: 'demo7.crg'
         z: [1005x201 single]
         v: [1x201 single]
         b: [1x1005 single]
         u: 10.0400
         p: [1x1004 single]
        rx: [1x1005 double]
        ry: [1x1005 double]
        rc: [1x1003 double]
      dved: [1x1 struct]
        ir: [1x1005 double]
        il: [1x1005 double]
      hist: [1x1 struct]
        ok: 0
      fopt: [1x1 struct]
```



demo7.crg 2011-06-07 11:58:18



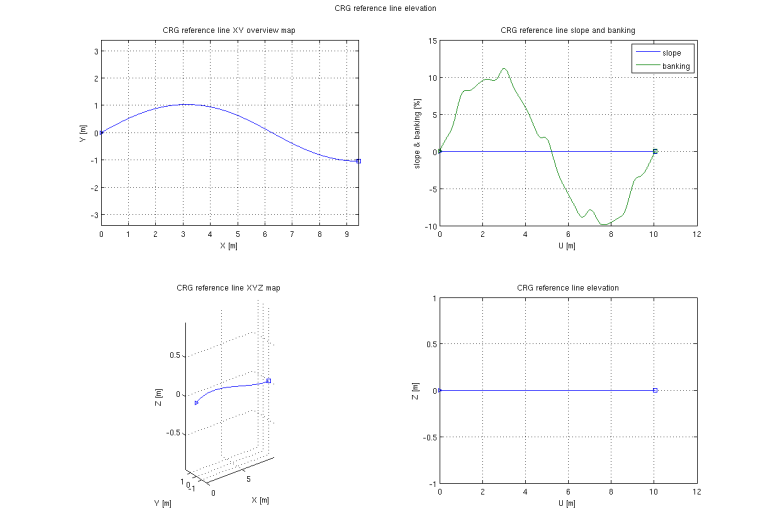
demo7.crg 2011-06-07 11:58:19


CRG road surface
CRG reference line XY overview map
Y [m]
X [m]
CRG road XYZ map (in curved XY grid)
Z [m]
Y [m]
X [m]
CRG road UVZ map (in uncurved UV grid)
V [m]
U [m]

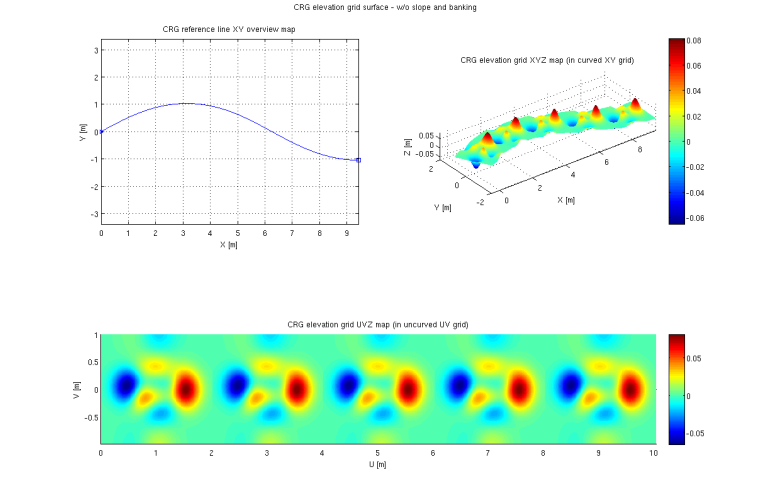
Test1.1 (extract banking w/o smoothing)

```
dat = crg_read('demo7.crg');

exdata = crg_ext_banking(dat);

crg_show_refline_elevation(exdata);
crg_show_elgrid_surface(exdata)
crg_show_road_surface(exdata);
```

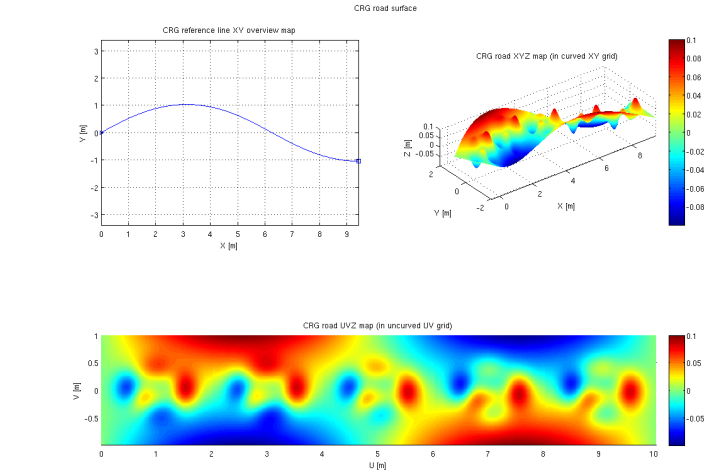
```
ans =

      head: [1x1 struct]
      mods: [1x1 struct]
      opts: [1x1 struct]
        ct: {'CRG defined by z matrix'  '... and unevenly spaced v vector'  '... with curved
    struct: {'* written by crg_write at 2011-06-07 09:51:51'  '* written by ipl_write at 201
    filenm: 'demo7.crg'
         z: [1005x201 single]
         v: [1x201 single]
         b: [1x1005 single]
         u: 10.0400
         p: [1x1004 single]
        rx: [1x1005 double]
        ry: [1x1005 double]
        rc: [1x1003 double]
      dved: [1x1 struct]
        ir: [1x1005 double]
        il: [1x1005 double]
      hist: [1x1 struct]
        ok: 0
      fopt: [1x1 struct]
```



demo7.crg 2011-06-07 11:56:37



demo7.crg 2011-06-07 11:56:37



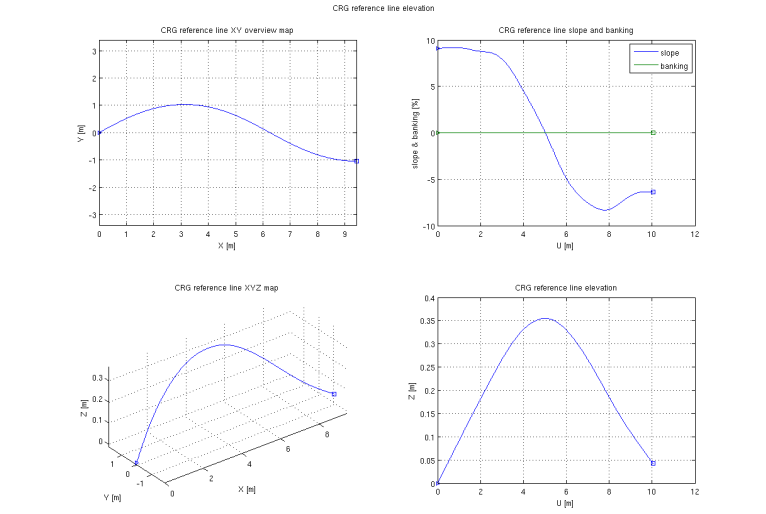
demo7.crg

2011-06-07 11:56:38

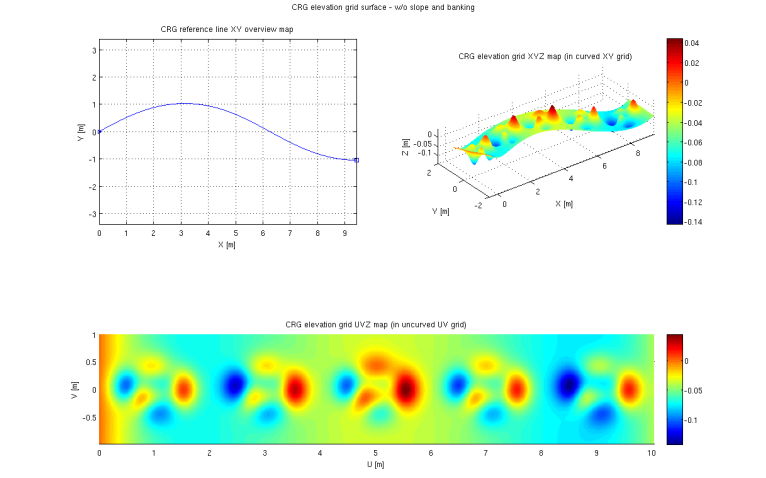
Test2 (extract slope)

```
dat = crg_read('demo9.crg');

exdata = crg_ext_slope(dat);

crg_show_refline_elevation(exdata);
crg_show_elgrid_surface(exdata)
crg_show_road_surface(exdata);
```

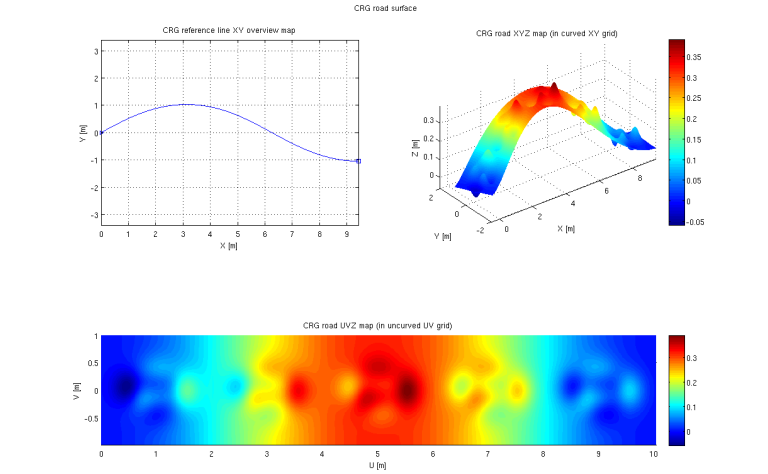
```
ans =

      head: [1x1 struct]
      mods: [1x1 struct]
      opts: [1x1 struct]
        ct: {'CRG defined by z matrix'  '... and unevenly spaced v vector'  '... with curved
    struct: {'* written by crg_write at 2011-06-07 09:51:51'  '* written by ipl_write at 201
    filenm: 'demo9.crg'
         z: [1005x201 single]
         v: [1x201 single]
         u: 10.0400
         p: [1x1004 single]
         s: [1x1004 single]
        rx: [1x1005 double]
        ry: [1x1005 double]
        rc: [1x1003 double]
      dved: [1x1 struct]
        rz: [1x1005 double]
        ir: [1x1005 double]
        il: [1x1005 double]
      hist: [1x1 struct]
        ok: 0
      fopt: [1x1 struct]
```



demo9.crg 2011-06-07 11:57:02



demo9.crg 2011-06-07 11:57:03

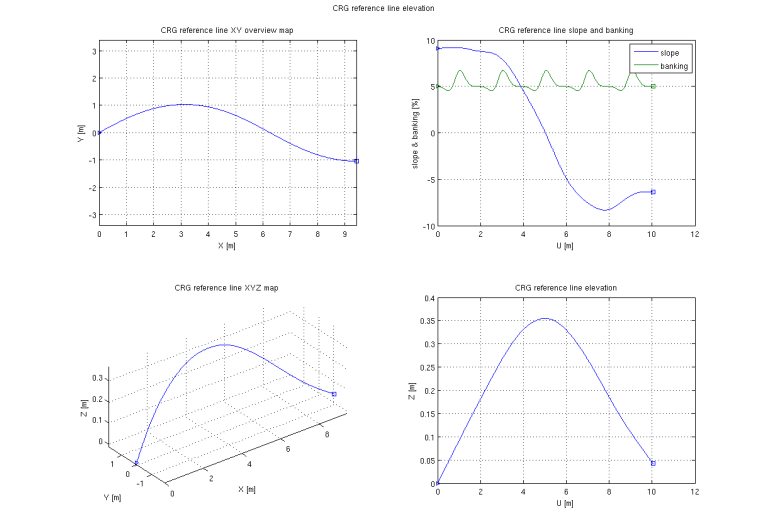


demo9.crg

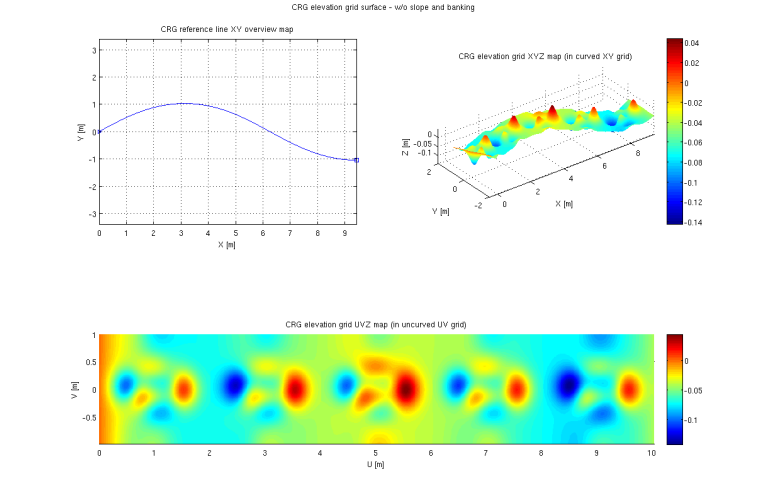
2011-06-07 11:57:04

Test2.1 (extract slope/banking)

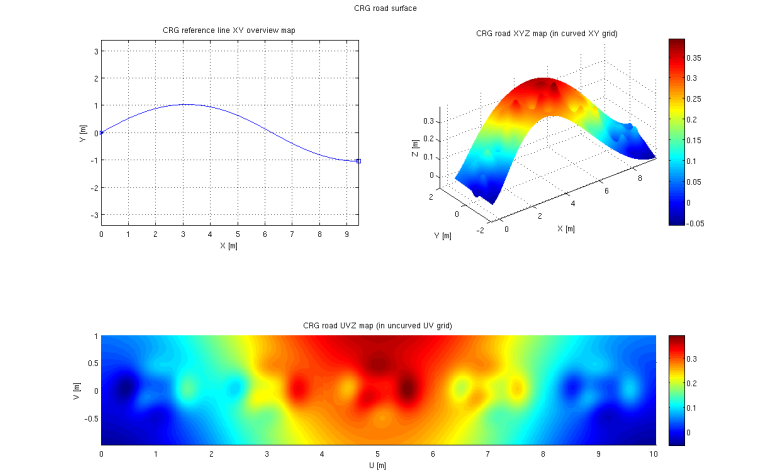
```
dat = crg_read('demo8.crg');

exdata = crg_ext_banking(dat);
exdata = crg_ext_slope(exdata);

crg_show_refline_elevation(exdata);
crg_show_elgrid_surface(exdata)
crg_show_road_surface(exdata);


ans =

      head: [1x1 struct]
      mods: [1x1 struct]
      opts: [1x1 struct]
        ct: {'CRG defined by z matrix'  '... and unevenly spaced v vector'  '... with curved
    struct: {'* written by crg_write at 2011-06-07 09:51:51'  '* written by ipl_write at 201
    filenm: 'demo8.crg'
         z: [1005x201 single]
         v: [1x201 single]
         b: [1x1005 single]
         u: 10.0400
         p: [1x1004 single]
         s: [1x1004 single]
        rx: [1x1005 double]
        ry: [1x1005 double]
        rc: [1x1003 double]
      dved: [1x1 struct]
        rz: [1x1005 double]
        ir: [1x1005 double]
        il: [1x1005 double]
      hist: [1x1 struct]
        ok: 0
      fopt: [1x1 struct]
```



demo8.crg 2011-06-07 11:57:40

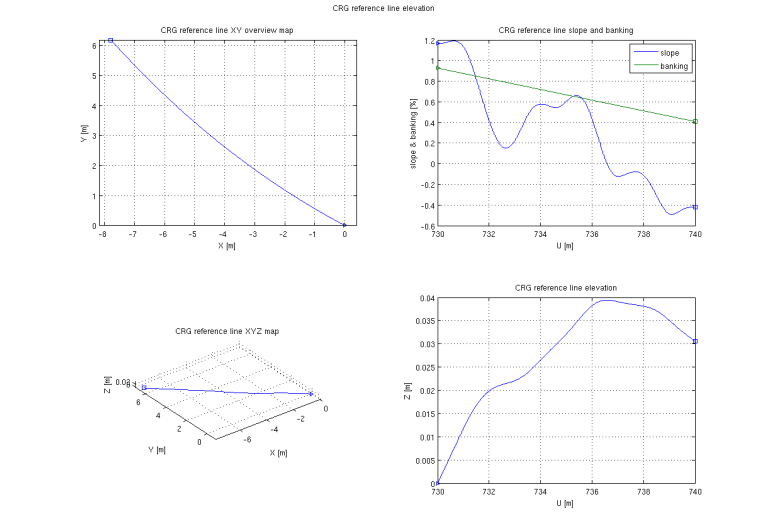


demo8.crg 2011-06-07 11:57:41

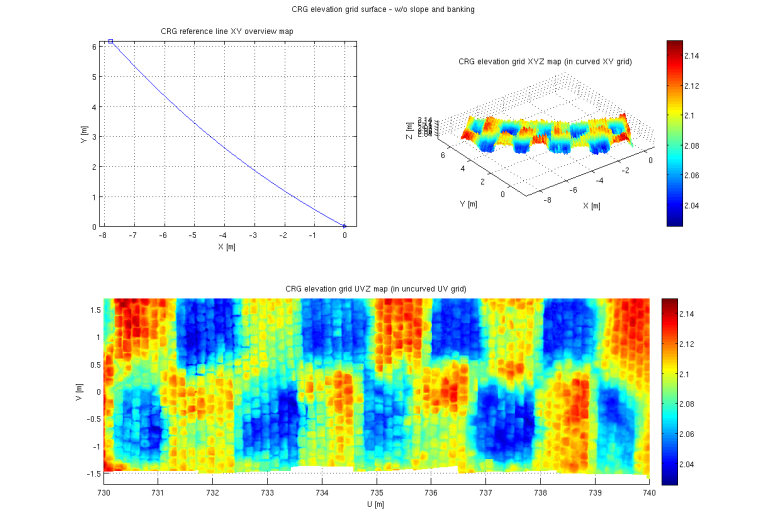

CRG road surface
CRG reference line XY overview map
Y [m]
X [m]
CRG road XYZ map (in curved XY grid)
Z [m]
Y [m]
X [m]
CRG road UVZ map (in uncurved UV grid)
V [m]
U [m]
demo8.crg
2011-06-07 11:57:42

Test3 (real dataset extract slope/banking)

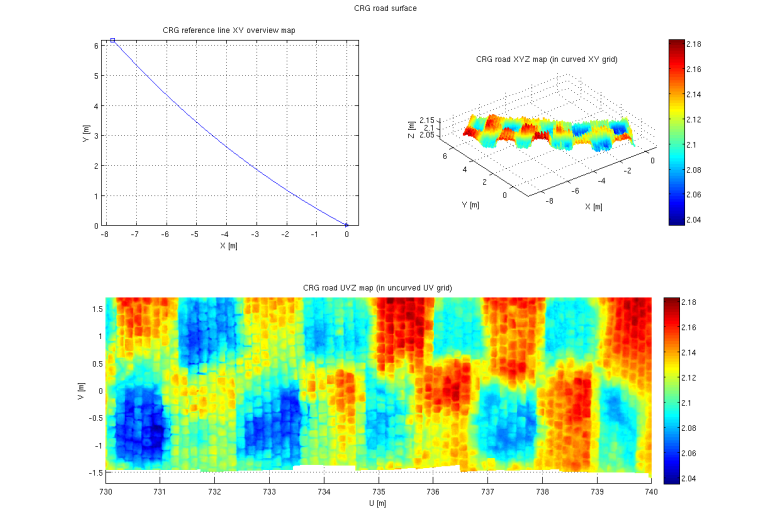
```
dat = crg_read('../crg-bin/belgian_block.crg');

exdata = crg_ext_banking(dat, 0.0000000000003);
exdata = crg_ext_slope(exdata);

crg_show_refline_elevation(exdata);
crg_show_elgrid_surface(exdata)
crg_show_road_surface(exdata);


ans =

      head: [1x1 struct]
      mods: [1x1 struct]
      opts: [1x1 struct]
        ct: {1x37 cell}
    struct: {'* written by crg_write at 2009-10-21 14:58:29'  '* written by ipl_write at 200
    filenm: '../crg-bin/belgian_block.crg'
         z: [1001x341 single]
         v: 1.7000
         b: [1x1001 single]
         u: [730 740]
         p: [1x1000 single]
         s: [1x1000 single]
        rx: [1x1001 double]
        ry: [1x1001 double]
        rc: [1x999 double]
      dved: [1x1 struct]
        rz: [1x1001 double]
        ir: [1x1001 double]
        il: [1x1001 double]
      hist: [1x1 struct]
        ok: 0
      fopt: [1x1 struct]
```



../crg-birv/belgian_block.crg 2011-06-07 11:58:21



../crg-birv/belgian_block.crg 2011-06-07 11:58:22



../crg-birv/belgian_block.crg 2011-06-07 11:58:23