Contents

Demo file generation CRG_DEMO	1
Demo proceeding	2
Demo1: crg defined by z matrix and scalar u and v specs	3
Demo2: and evenly spaced v vector	5
Demo3: and unevenly spaced v vector	7
Demo4: generate diagonal reference line by one p value	9
Demo5: generate diagonal reference line by nu-1 p values	11
Demo6: generate curved reference line	13
Demo7: generate banking	16
Demo8: generate slope	19
Demo9: slope without banking	21

Demo file generation CRG_DEMO

Building a set of demo files with differ specifications. Do not alter this CRG-file. If necessary add new demo files. Several test proceedings require these data-structures. The file comments are optimized for the matlab publishing makro.

```
Copyright 2005-2011 OpenCRG - Daimler AG - Jochen Rauh
%
%
   Licensed under the Apache License, Version 2.0 (the "License");
%
   you may not use this file except in compliance with the License.
    You may obtain a copy of the License at
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       http://www.apache.org/licenses/LICENSE-2.0
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   Unless required by applicable law or agreed to in writing, software
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   distributed under the License is distributed on an "AS IS" BASIS,
   WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   See the License for the specific language governing permissions and
   limitations under the License.
%
%
   More Information on OpenCRG open file formats and tools can be found at
```

```
% http://www.opencrg.org
%
% $Id: crg_demo.m 184 2010-09-22 07:41:39Z jorauh $
```

Demo proceeding

The demos are initialized as followed:

Demo 1-9

- generate minimal crg-structure
- alter, add specifications (change increment, add slope ec.)
- $\bullet\,$ write CRG-file
- show results

```
% DEFAULT SETTINGS
% clear enviroment
clear all;
close all
% display results
dispRes = 1;
% build minimum crg-struct
uinc = 0.01;
vinc = 0.01;
vinc = 0.01;

nv = 201;
nu = 5*nv;

v = -(nv-1)/2*vinc:vinc:(nv-1)/2*vinc;

z = 0.01*peaks(nv);
z = repmat(z, nu/nv, 1);
```

Demo1: crg defined by z matrix and scalar u and v specs

```
data.u = (nu-1)*uinc;
data.v = (nv-1)*vinc/2;
data.z = z;
data.ct{1} = 'CRG defined by z matrix';
crg_write(crg_single(data), 'demo1.crg');
dat = crg_read('demo1.crg');
if dispRes, crg_show(dat); end
                                                     2011-06-08 11:43:57
```

demal.crg 2011-06-08 11:43:58

CRG comment data: CRG defined by z matrix

demo1.crg 2011-06-08 11:43:59

Demo2: ... and evenly spaced v vector

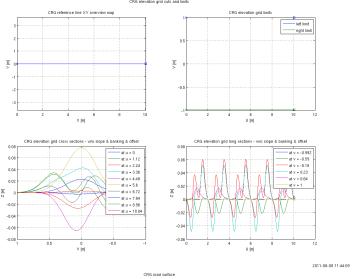
```
data.v = v;
data.ct{2} = '... and evenly spaced v vector';
crg_write(crg_single(data), 'demo2.crg');
dat = crg_read('demo2.crg');
if dispRes, crg_show(dat); end
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```

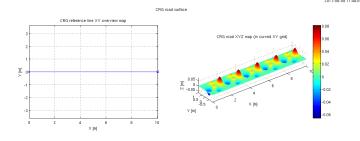
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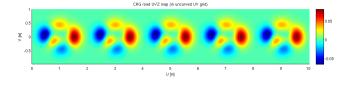
demo2.crg 2011-06-08 11:44:05

Demo3: ... and unevenly spaced v vector

```
data.v(1) = single(-0.992);
data.ct{2} = '... and unevenly spaced v vector';
crg_write(crg_single(data), 'demo3.crg');
dat = crg_read('demo3.crg');
if dispRes, crg_show(dat); end
```







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Demo4: ... generate diagonal reference line by one p value

```
data.p(1) = pi/4;
data.ct{3} = '... with diagonal reference line by one p value';
crg_write(crg_single(data), 'demo4.crg');
dat = crg_read('demo4.crg');
if dispRes, crg_show(dat); end
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Demo5: ... generate diagonal reference line by nu-1 p values

```
np = nu-1;
data.p(1:np) = pi/4;
data.ct{3} = '... with diagonal reference line by nu-1 p values';
crg_write(crg_single(data), 'demo5.crg');
dat = crg_read('demo5.crg');
if dispRes, crg_show(dat); end
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```

2011-06-08 11:44:32

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... and unevenly spaced v vector
... with diagonal reference line by nu-1 p values

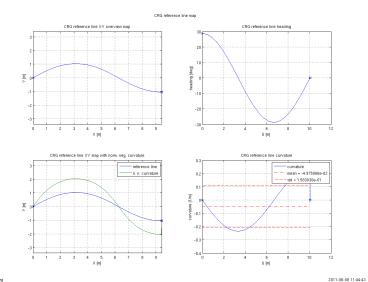
demo5.crg 2011-06-08 11:44:39

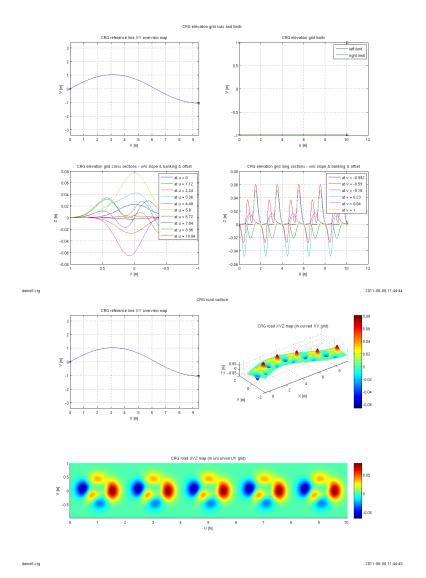
Demo6: ... generate curved reference line

```
np = nu-1;
for i=1:np
    data.p(i) = 0.5*cos(i/np*1.5*pi);
end

data.ct{3} = '... with curved reference line';
crg_write(crg_single(data), 'demo6.crg');

dat = crg_read('demo6.crg');
if dispRes, crg_show(dat); end
```





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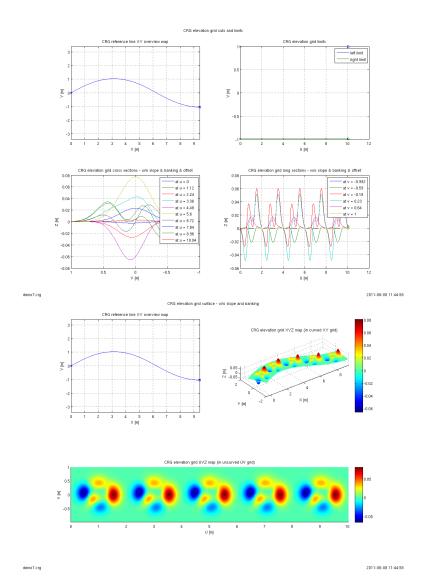
Demo7: ... generate banking

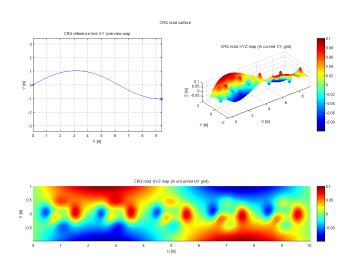
```
for i=1:nu
    data.b(i) = 0.1*sin(i/nu*2*pi);
end
data.ct{4} = '... with variable cross slope';
crg_write(crg_single(data), 'demo7.crg');
dat = crg_read('demo7.crg');
if dispRes, crg_show(dat); end
```

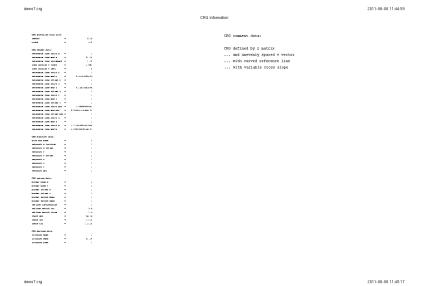
2011-06-08 11:44:56

demo7.crg

2011-08-08 11:44:57

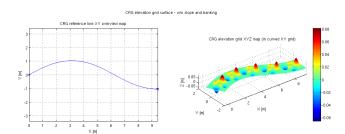


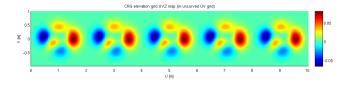


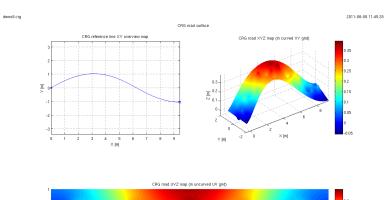


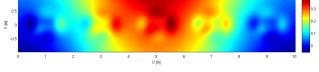
Demo8: ... generate slope

```
for i=1:np
    data.s(i) = 0.1*sin(i/np*2*pi);
end
data.b=0.05; % constant cross slope
data.ct{4} = '... with variable slope and constant cross slope';
crg_write(crg_single(data), 'demo8.crg');
dat = crg_read('demo8.crg');
if dispRes, crg_show(dat); end
```









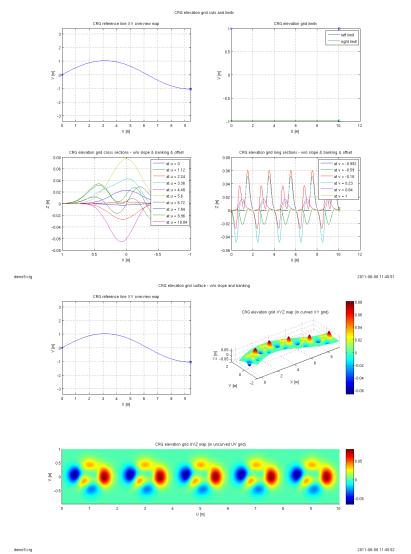
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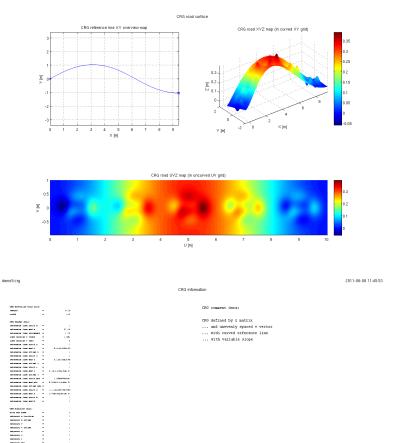
demo8.crg 2011-06-09 114545

```
Demo9: ... slope without banking
data = rmfield(data, 'b');
data.ct{4} = '... with variable slope';
crg_write(crg_single(data), 'demo9.crg');
dat = crg_read('demo9.crg');
if dispRes, crg_show(dat); end
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