Contents

Usage of CRG_FILTER

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

```
%   Copyright 2005-2011 OpenCRG - VIRES Simulationstechnologie GmbH -
%   Holger Helmich
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```

```
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%
%   More Information on OpenCRG open file formats and tools can be found at
%
%       http://www.opencrg.org
%
%   $Id: crg_test_filter.m 1 2011-06-08 10:06:00Z hhelmich $
```
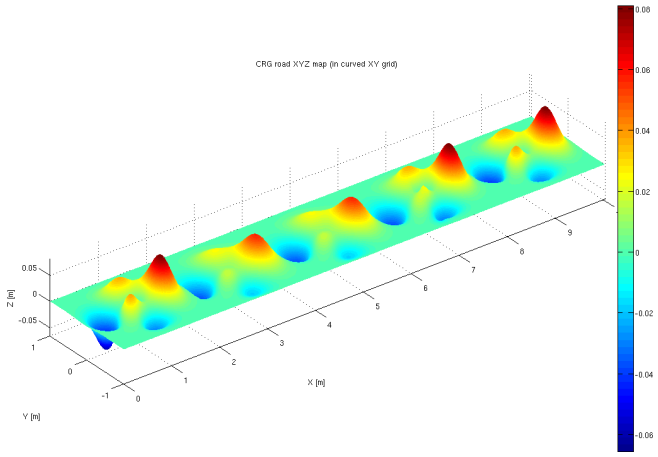

Test proceedings

- load crg-file
- filter image
- display result

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

% Set plot area
scrpos = get(0,'ScreenSize');
figpos(4) = min(scrpos(3)/sqrt(2), scrpos(4)) * 0.8;    % heigth
figpos(3) = figpos(4)*sqrt(2);                          % width
figpos(1) = scrpos(1) + scrpos(3)*0.9 - figpos(3);      % left
```

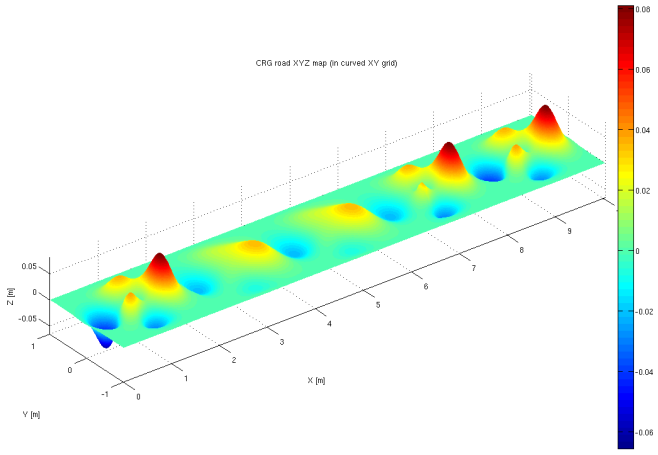
Test1 (mean filter: smooth road)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], 'mean', [10 10], [1 20]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



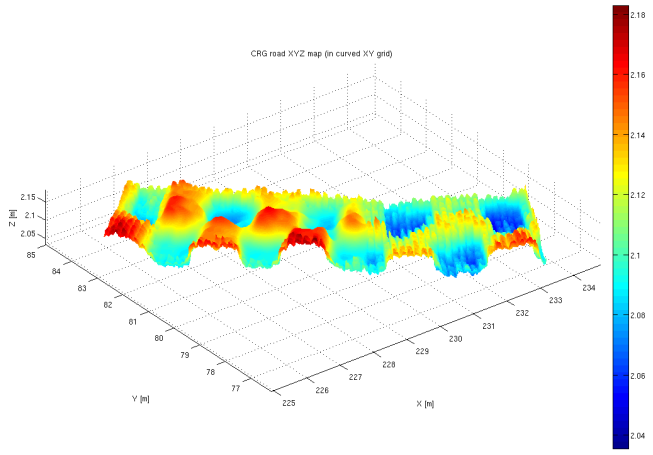
Test1.1 (mean filter: smooth road)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], 'mean', [20 20], [1 15]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



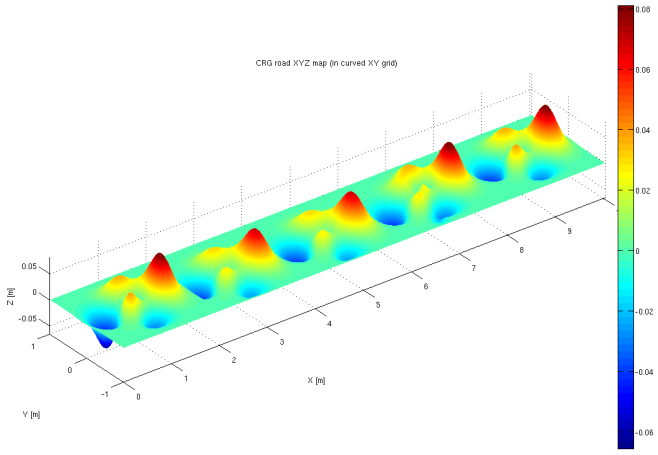
Test1.2 (mean filter: real -> smooth road)

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

dat = crg_filter(data, [400 900], [50 300], 'mean', [10 10], [1 5]);

figure('Position', figpos);
crg_plot_road_xyz_map(dat);
```



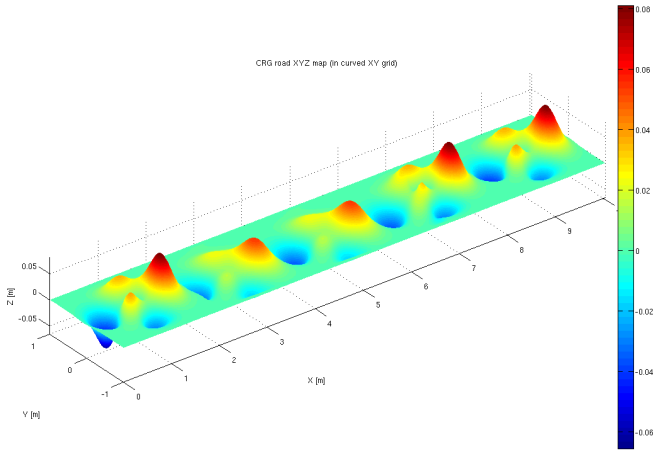
Test2 (gauss filter: smooth road)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], 'gauss', [10 10], [1 30]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



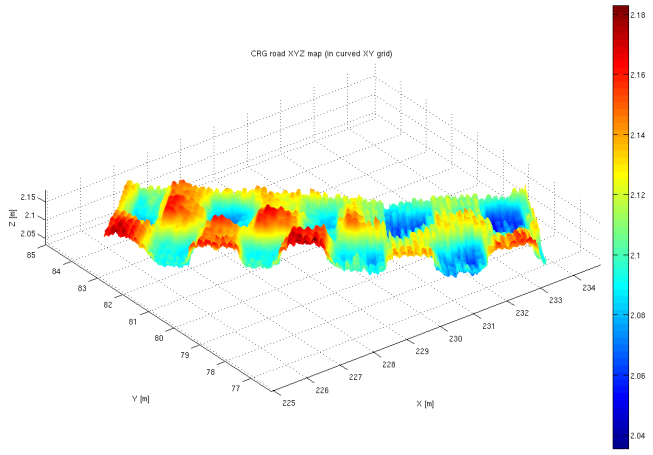
Test2.1 (gauss filter: smooth road)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], 'gauss', [20 20], [1 40]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



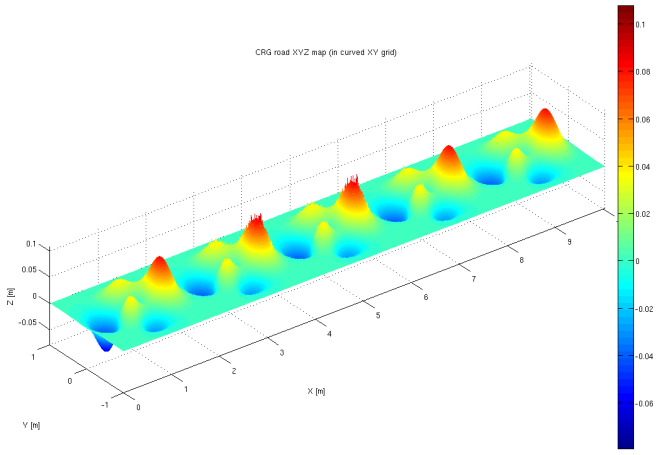
Test2.2 (gauss filter: real -> smooth road)

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

dat = crg_filter(data, [400 900], [50 300], 'gauss', [10 10], [1 5]);

figure('Position', figpos);
crg_plot_road_xyz_map(dat);
```



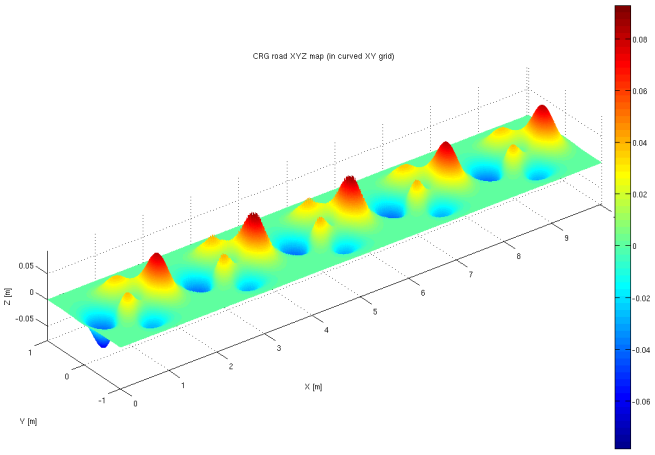
Test3 (laplace: bumpy road)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], 'laplace', [3 3], [1 6]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



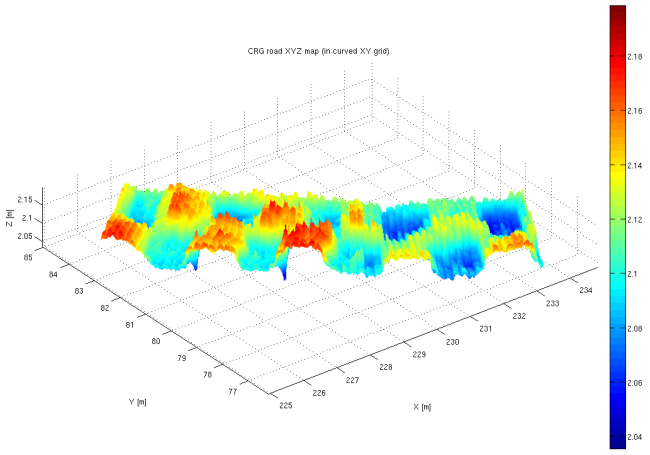
Test3.1 (laplace: bumpy road)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], 'laplace', [5 5], [1 25]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



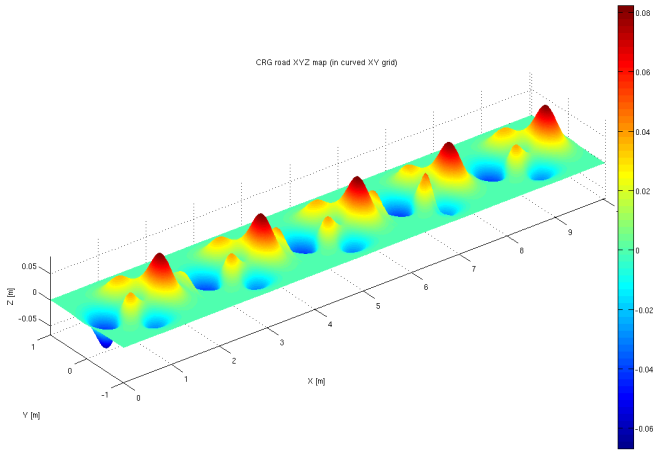
Test3.2 (laplace: real -> bumpy road)

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

dat = crg_filter(data, [400 900], [50 300], 'laplace', [10 10], [1 20]);

figure('Position', figpos);
crg_plot_road_xyz_map(dat);
```



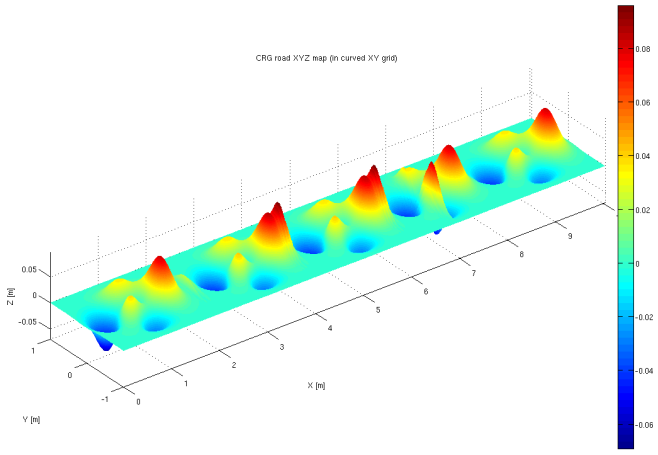
Test4 (sobel: bumpy road)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], 'sobel', [3 3], [1 10]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



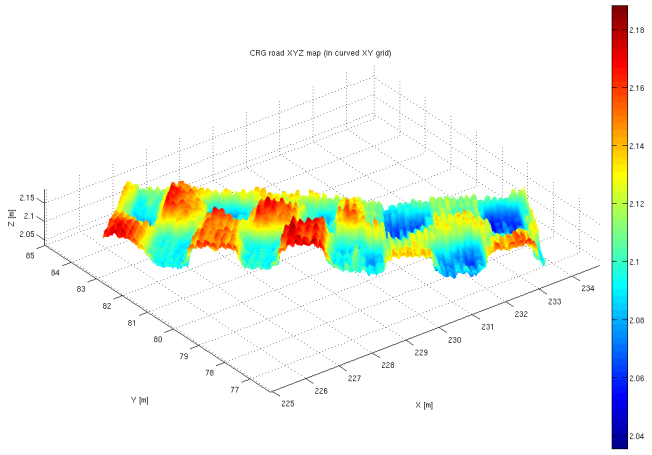
Test4.1 (sobel: bumpy road)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], 'sobel', [5 5], [1 25]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



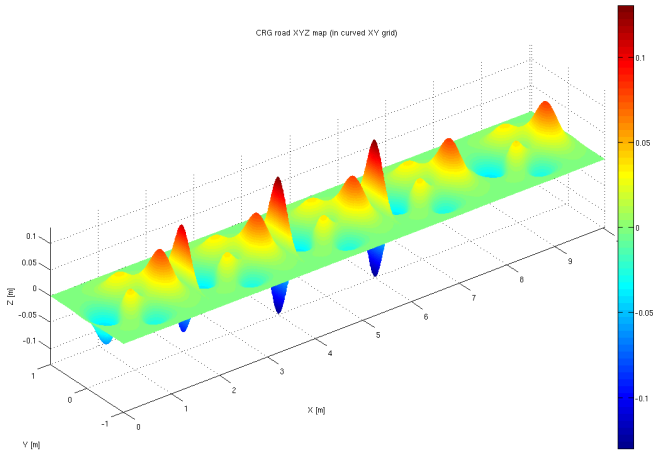
Test4.2 (sobel: real -> bumpy road)

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

dat = crg_filter(data, [400 900], [50 300], 'sobel', [10 10], [1 30]);

figure('Position', figpos);
crg_plot_road_xyz_map(dat);
```



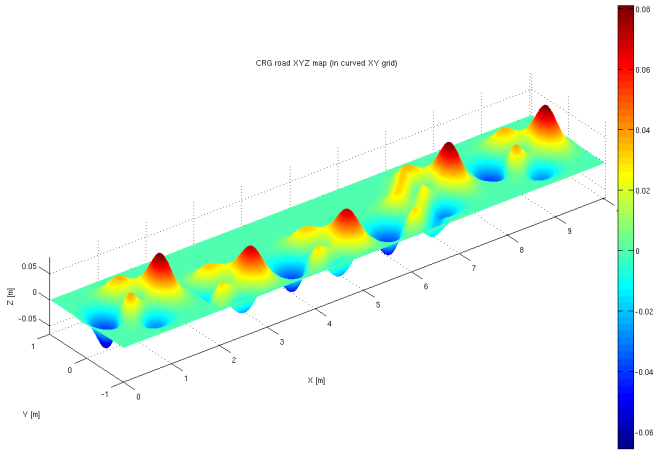
Test5 (2diff: bumpy road)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], '2diff', [3 3], [1 5]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



Test5.1 (2diff)

```
data = crg_read('demo1.crg');

data = crg_filter(data, [200 700], [1 201], '2diff', [10 10], [1 55]);

figure('Position', figpos);
crg_plot_road_xyz_map(data);
```



Test5.2 (2diff)

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

dat = crg_filter(data, [400 900], [50 300], '2diff', [10 10], [1 30]);

figure('Position', figpos);
crg_plot_road_xyz_map(dat);
```