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## Usage of CRG\_EVAL\_UV2IUIV

Introducing the usage of crg\_eval\_uv2iuiv. Examples are included. The file comments are optimized for the matlab publishing makro.

```
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% Holger Helmich
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%
% $Id: crg_test_eval_uv2iuiv.m 1 2011-06-07 11:47:00Z hhelmich $
```

## Test proceedings

Test 1-4

- load crg-file
- find index positions

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

## Test1 ( u-values )

```
data = crg_read('demo3.crg');
u = data.head.ubeg:data.head.uinc:data.head.uend;

[iu] = crg_eval_uv2iuiv(data, [-1, 0, 5, 7, 10, 11] );
disp('Index: ');
disp(sprintf('< %d > \t', iu));

disp('Distance u(iu) = ');
disp(sprintf('< %f > \t', u(iu)));

Index:
< 1 > < 1 > < 501 > < 701 > < 1001 > < 1005 >
Distance u(iu) =
< 0.000000 > < 0.000000 > < 5.000000 > < 7.000000 > < 10.000000 > < 10.040000 >
```

**Test2 ( empty )**

```
data = crg_read('demo3.crg');
```

```
[iu] = crg_eval_uv2iuv(data, [] );
```

### Test3 ( v-values constant vinc )

```
data = crg_read('demo1.crg');
v = data.head.vmin:data.head.vinc:data.head.vmax;

[iu, iv] = crg_eval_uv2iuiv(data, [], [-2 -1 -0.5, 0, 0.5, 1 2]);
disp('Index: ');
disp(sprintf('< %d > \t', iv));

disp('Distance v(iv) = ');
disp(sprintf('< %f > \t', v(iv)));
```

```
Index:
< 1 >  < 1 >  < 51 >  < 101 >  < 151 >  < 201 >  < 201 >
Distance v(iv) =
< -1.000000 >  < -1.000000 >  < -0.500000 >  < 0.000000 >  < 0.500000 >  < 1.000000 >  < 1.000000 >
```

### Test3.1 ( v-values no constant vinc )

```
data = crg_read('demo3.crg');  
v = data.v;
```

```
[iu, iv] = crg_eval_uv2iuiv(data, [], [-2 -1 -0.5, 0, 0.5, 1 2]);  
disp('Index: ');  
disp(sprintf('< %d > \t', iv));
```

```
disp('Distance v(iv) = ');  
disp(sprintf('< %f > \t', v(iv)));
```

Index:

< 1 >   < 1 >   < 51 >   < 101 >   < 151 >   < 201 >   < 201 >

Distance v(iv) =

< -0.992000 >   < -0.992000 >   < -0.500000 >   < 0.000000 >   < 0.500000 >   < 1.000000 >   < 1.000000 >

#### Test4 ( uv-values & different uinc );

```
data = crg_read('demo6.crg');
u = data.head.ubeg:data.head.uinc:data.head.uend;
v = data.v;
```

```
dat = crg_rerender(data, [0.2]);
```

```
[iu, iv] = crg_eval_uv2iuiv(dat, [-1, 0, 5, 7, 10, 11], [-2, -1, 0.5, 0, 0.5, 1, 2]);
disp('Index iu: ');
disp(sprintf('< %d > \t', iu));
disp('Index iv: ');
disp(sprintf('< %d > \t', iv));
```

```
disp('Distance u(iu) = ');
disp(sprintf('< %f > \t', u(iu)));
disp('Distance v(iv) = ');
disp(sprintf('< %f > \t', v(iv)));
```

```
Index iu:
```

```
< 1 > < 1 > < 26 > < 36 > < 51 > < 52 >
```

```
Index iv:
```

```
< 1 > < 1 > < 151 > < 101 > < 151 > < 201 > < 201 >
```

```
Distance u(iu) =
```

```
< 0.000000 > < 0.000000 > < 0.250000 > < 0.350000 > < 0.500000 > < 0.510000 >
```

```
Distance v(iv) =
```

```
< -0.992000 > < -0.992000 > < 0.500000 > < 0.000000 > < 0.500000 > < 1.000000 > < 1.000000 >
```