

# **CBlocksWinRepel Version 1.0 User Guide**

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## **1. Introduction**

CBlocksWinRepel allows you to open, run and save simulations as well as create your own mechanisms interactively. You can navigate around the universe by clicking the mouse at the point in the universe that you want to move to the centre of the active window. You can also zoom in and zoom out.

## **2. Menu Commands**

File

New

Open...

Prompts for a `.grd` or `.gr2` file.

Close

Save

Saves the state of the universe in the active window as a `.gr2` file.

Save as...

Prompts for a filename then saves the state of the universe in the active window as a `.gr2` file.

Exit

Edit

Select

Set the cursor to 'select' mode, in which you can drag across an area of the universe to select it.

Cut, Copy, Paste, Clear

Operate on the selected region. Paste will paste the contents of the clipboard to the

bottom left of the selected region. If the contents of the clipboard are larger than the selected region, the paste operation will overflow the selected region.

Save Selection...

Saves the current selection as a `.gr2` file.

Import

Import a `.grd` or `.gr2` file at the selected location. The imported file will be located at the bottom left corner of the selected region and will overflow the selected region if the region is not large enough.

Postscript

Save the selected region as an encapsulated postscript file

Dump Metafile

Save the selected region as a Windows Metafile

View

Zoom in...

Zooms in on the centre of the active window.

Zoom out...

Zooms out from the centre of the active window.

Run

Go

Start running the simulation.

Stop

Stop running the simulation.

Step

Run a single simulation iteration step.

### 3. Input file format

CBlocksWinRepel supports two file formats: `.grd` and `.gr2`.

`.grd` files are supported for backward compatibility only and are not described here.

#### 3.1 `.gr2` input files

`.gr2` input files use a whitespace-delimited text file format and can easily be created using a text editor or by an automatic script.

`.gr2` input files begin with a pair of positive integers which specify the width and height of the area described by the rest of the file.

For every tile being read in (including empty ones), the file contains a record with the following structure:

```
<type> 0 0 0 0 0 0 0 0 0
```

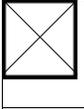
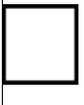
Here, <type> = 9 for a fixed tile or 10 for a moveable tile or 0 for an empty cell. The sequence of nine zeroes after <type> are unused.

These records are arranged in the file as follows:

```
record for x=0,y=0
record for x=0,y=1
record for x=0,y=2
...
record for x=1,y=0
record for x=1,y=1
record for x=1,y=2
...
record for x=width-1 y=height-1
```

## Appendix A. Tile Types

The following tile types are implemented in CBlocksWinRepel Version 1.0:

Tile	Name	Function
	fixed tile	none
	moveable tile	Repelled by any neighbouring tile. If it has more than one neighbouring tile, this tile will not move.