

NAME

anemotaxis – directional search on a plane.

SYNOPSIS

anemotaxis [**--display** *host:display.screen*] [**--visual** *visual*] [**--window**] [**--root**] [**--window-id** *number*] [**--delay** *number*] [**--distance** *number*] [**--sources** *number*] [**--searchers** *number*] [**--fps**]

DESCRIPTION

The program demonstrates a search algorithm designed for locating a source of odor in turbulent atmosphere. The odor is convected by wind which has a constant mean direction and fluctuations around it. The searcher is able to sense the odor and determine local instantaneous wind direction. The goal is to find the source in the shortest mean time. Some animals face this task to find mates, food, home etc. They exhibit very particular, zigzagging search trajectories.

This is modeled as a search on a discrete two-dimensional lattice. The source releases particles that drift with constant velocity in one direction and walk randomly in the other direction. The searcher knows if it hit a particle, and if so, particle's position one time step earlier (local wind direction). The program paints sources and particles released by them as well as trajectories of searchers who are trying to capture the sources.

OPTIONS

--visual *visual*

Specify which visual to use. Legal values are the name of a visual class, or the id number (decimal or hex) of a specific visual.

--window

Draw on a newly-created window. This is the default.

--root Draw on the root window.

--window-id *number*

Draw on the specified window.

--delay *number*

Per-frame delay, in microseconds. Default: 20000 (0.02 seconds.).

--distance *number*

Max initial distance to the source . 10 - 250. Default: 40.

--sources *number*

Max number of sources. Default: 25.

--searchers *number*

Max number of searchers. Default: 25.

--fps Display the current frame rate and CPU load.

ENVIRONMENT**DISPLAY**

to get the default host and display number.

XENVIRONMENT

to get the name of a resource file that overrides the global resources stored in the RESOURCE_MANAGER property.

XSCREENSAVER_WINDOW

The window ID to use with **--root**.

SEE ALSO

X(1), xscreensaver(1)

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