PST-marble Commands

`http://people.csail.mit.edu/jaffer/Marbling/pst-marble-commands.pdf`

Colors

RGB colors can be specified in three formats:

`[ 0.906 0.8 0.608 ]`

Red, green, and blue color components between 0 and 1 in square brackets.

`[ 231 204 155 ]`

Red, green, and blue color components between 0 and 255 in square brackets.

`(e7cc9b)`

Red, green, and blue (RrGgBb) hexadecimal color components between `00` and `FF` (or `ff`) in parentheses.

In the command arguments `[`rgb ...`]` indicates a bracketed sequence of colors. For example:

`[(c28847) [231 204 155] [0.635 0.008 0.094]]`

Dropping Paint

$x\ y\ R_d\ rgb$ `drop`

Places a drop of color rgb and radius R_d centered at location x, y.

$x\ y\ R_i$ `[`rgb ...`]` n `concentric-rings`

Places n rings in color sequence `[`rgb ...`]` centered at location x, y, each ring having thickness R_i.

$x\ y\ \theta$ `[`R ...`]` `[`rgb ...`]` R_d `line-drops`

Places drops of colors `[`rgb ...`]` (in sequence) of radius R_d in a line through x, y at θ degrees clockwise from vertical at distances `[`R ...`]` from x, y.

$x\ y\ R\ \theta\ S\ \delta$ `[`rgb ...`]` $n\ R_d$ `coil-drops`

Places n drops of colors `[`rgb ...`]` (in sequence) of radius R_d in an arc or spiral centered at x, y starting at radius R and θ degrees clockwise from vertical, moving S along the arc and incrementing the arc radius by δ after each drop.

$x\ y\ R\ \theta\ \epsilon$ `[`rgb ...`]` $n\ R_d$ `Gaussian-drops`

Places n drops of colors `[`rgb ...`]` of radius R_d randomly in a circular or elliptical disk centered at x, y having mean radius R, θ degrees clockwise from vertical, and length-to-width ratio ϵ. For a circular disk, 63 % of drops are within radius R, 87 % of drops are within $R\sqrt{2}$, and 98 % of drops are within radius $2\,R$.

$x\ y\ L_x\ L_y\ \theta$ `[`rgb ...`]` $n\ R_d$ `uniform-drops`

Places n drops of colors `[`rgb ...`]` of radius R_d randomly in a L_x by L_y rectangle centered at location x, y and rotated by θ degrees clockwise from vertical.

Deformations

θ `[`R ...`]` $V\ S\ D$ `rake`

Pulls tines of diameter D at θ degrees from the y-axis through the virtual tank at velocity V, moving fluid on the tine path a distance S. The tine paths are spaced `[`R ...`]` from the tank center at their nearest points.

$x_b\ y_b\ x_e\ y_e\ V\ D$ `stylus`

Pulls a single tine of diameter D from x_b, y_b to x_e, y_e at velocity V. Legacy `stroke` also works.

$x\ y$ `[`R ...`]` $\omega\ \theta\ D$ `stir`

Pulls tines of diameter D in circular tracks of radii `[`R ...`]` (negative R is counterclockwise) around location x, y at angular velocity ω. The maximum angle through which fluid is moved is θ degrees.

$x\ y\ \Gamma\ t$ `vortex`

Rotates fluid clockwise around location x, y as would result from an impulse of circulation Γ after time t. At small t the rotational shear is concentrated close to the center. As time passes the shear propagates outward.

$\theta\ \lambda\ \Omega\ S$ `wiggle`

Applies sinsusoidal wiggle with period λ and maximum displacement S to whole tank. With $\theta = 0$, a point at x, y is moved to $x + S\ \sin(360\,y/\lambda + \Omega), y$.

$\theta\ R$ `shift`

Shifts tank by R at θ degrees clockwise from vertical.

`[` $n\ S\ \Omega$ `tines ]`

The tines command and its arguments are replaced by a sequence of n numbers. The difference between adjacent numbers is S and the center number is Ω when n is odd and $S/2 - \Omega$ when n is even.