Generated by Cython 0.29.15

Yellow lines hint at Python interaction.
Click on a line that starts with a "+" to see the C code that Cython generated for it.

Raw output: cevolve.c

```
+01: #cython: profile=True
 02:
 03: cimport cython
+04: import numpy as np
 05: from libc.math cimport sqrt
 06:
 07:
 08: # Untyped version
 09: #def c_evolve(r_i, ang_speed_i, dt, nsteps):
 10: #    v_i = np.empty_like(r_i)
 11: #
 12: #    for i in range(nsteps):
 13: #        norm_i = np.sqrt((r_i ** 2).sum(axis=1))
 14: #        v_i = r_i[:, [1, 0]]
 15: #        v_i[:, 0] *= -1
 16: #        v_i /= norm_i[:, np.newaxis]
 17: #
 18: #        d_i = dt * ang_speed_i[:, np.newaxis] * v_i
 19: #
 20: #        r_i += d_i
 21:
 22: ## Typed version
+23: def c_evolve(double[:, :] r_i, double[:] ang_speed_i,
 24:              double dt, int nsteps):
 25:     cdef int i
 26:     cdef int j
+27:     cdef int nparticles = r_i.shape[0]
 28:     cdef double norm, x, y, vx, vy, dx, dy, ang_speed
 29:
 30:
+31:     for i in range(nsteps):
+32:         for j in range(nparticles):
+33:             x = r_i[j, 0]
+34:             y = r_i[j, 1]
+35:             ang_speed = ang_speed_i[j]
 36:
+37:             norm = sqrt(x ** 2 + y ** 2)
 38:
+39:             vx = (-y)/norm
+40:             vy = x/norm
 41:
+42:             dx = dt * ang_speed * vx
+43:             dy = dt * ang_speed * vy
 44:
+45:             r_i[j, 0] += dx
```

```
            r_i[j, 1] += dy
#

## Typed version, boundscheck disabled, cdivision enabled
#@cython.boundscheck(False)
#@cython.cdivision(True)
#def c_evolve(double[:, :] r_i, double[:] ang_speed_i,
#             double dt, int nsteps):
#    cdef int i
#    cdef int j
#    cdef int nparticles = r_i.shape[0]
#    cdef double norm, x, y, vx, vy, dx, dy, ang_speed
#
#
#    for i in range(nsteps):
#        for j in range(nparticles):
#            x = r_i[j, 0]
#            y = r_i[j, 1]
#            ang_speed = ang_speed_i[j]
#
#            norm = sqrt(x ** 2 + y ** 2)
#
#            vx = (-y)/norm
#            vy = x/norm
#
#            dx = dt * ang_speed * vx
#            dy = dt * ang_speed * vy
#
#            r_i[j, 0] += dx
#            r_i[j, 1] += dy
```