

Mass-Spring Locomotion

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My simulator has 2 water creatures inside the sea. The simulator has walls on all the 4 sides and the walls have friction. On touching the walls, the velocity reverses and gets decreased by a factor of 0.2.

Creatures:

1. My first creature(toad) is made up of 7 point masses. It has 15 springs among which 9 are muscles and 2 of those oscillate.
2. My second creature(fish) is made up of 7 point masses. It has 17 springs among which 5 are muscles and 2 of those oscillate.

My simulator has damping and stiffness constants for the point masses and springs. It also has restitution constant for the friction on the walls. In each run when draw function is called, I draw the creatures and calculate the forces for each point mass and update them.

Controls:

1. 's' for activating the step variable. Now you can step through the simulation by pressing the space button. Pressing 's' again deactivates the step variable.
2. ' ' (space bar) for starting/stopping the simulation.