18311 toolkit: demoENV, EIKOdemo, EIKO3Ddemo, and MachCone.

For EIKO: brief description of propagation of wave fronts normal to themselves at light speed. Gives rise to rays and caustics.

Physical examples for caustics:

- bright lines at the bottom of a pool in the sun;
- bright lines on a paper next to a bottle on a table in the sun [clear glass bottle, filled with clear liquid].
- In big rooms with stone walls, places where you can hear bits and pieces of conversations from the other side. "Whispering gallery" effect.

For MachCone: picture of spherical wave fronts generated by supersonic plane in the past, overlapping at a cone. Cerenkov radiation.

MIT OpenCourseWare http://ocw.mit.edu

18.311 Principles of Applied Mathematics Spring 2014

For information about citing these materials or our Terms of Use, visit: http://ocw.mit.edu/terms.