

MIT OpenCourseWare  
<http://ocw.mit.edu>

18.306 Advanced Partial Differential Equations with Applications  
Fall 2009

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

Lecture 16 2009 11 02 MON

TOPICS: Continue with Hamilton-Jacobi equation. Characteristics, strips, and Monge cones. Eikonal as characteristic equation for wave equation in 2-D and 3-D.

Continue with lecture 15 and the equation  $H(u, p, q, x, y) = 0$ . The characteristics are curves in 5-D space. Interpretation of the characteristics as characteristic "strips", in 3-D.

Example: Eikonal equation, and Monge cones.

Eikonal equation as the equation for the characteristic surfaces of the wave equation in 2 or 3 D.