

Compute whole curves in (x, t) plane where $(1+t^*C'(s)) = 0$.
Show corresponds to places where $\rho_x = \infty$. Talk a little about envelopes. Recall last lecture: pictures of the envelope of characteristics.

Example (Mach Cone): plane at $x=y=0$ "now", moving along $y = 0$ at speed $c > 1$.

Then the wave front emitted a time interval t before is at:

$$(x+c*t)^2 + y^2 = t^2, \text{ for } t > 0 \quad [A]$$

$$(x+c*t)*c = t \quad [B]$$

[A] + [B] is the envelope equation.

- Use [B] to solve for x in terms of t .
- Plug [B] in [A] and get y in terms of t .
- Eliminate t to get $x = -\sqrt{\{(c^2-1)/c\}*|y|}$.

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