Conservation laws are in 1+1d.

Noether's theorem.

Solution of these equations:

Conservation laws simplify the

to turn to numerics. However,

Hard to solve in general, one has

Composed, and order order

This is a set of

\[ \frac{2 \rho}{\partial x^1} \frac{2 \rho}{\partial x^2} = 0 \]

Why is \( \delta s^2 = -dx^1 dx^2 \) ?

Asym: The geodesic curve

\[ I = - \rho \frac{dx^1}{dt} \frac{dx^2}{dt} \]

Equation from the geodesic

I. Derived the geodesic

II. Null geodesics

iii. Null geodesics

IV. Symmetry

\( \delta (\xi, \eta) \), conservation

Solving the geodesic

I. Last time

Today
When $z$ is a Killing vector, 
\[ \nabla \cdot \mathbf{v} = 0 \Rightarrow v = \text{const.} \]

Let's use our theorem to illustrate a metric, which is the same metric:
\[ d\mathbf{s}^2 = -dt^2 + dx^2 + dy^2 \]
\[ x^2 + y^2 = \frac{x^2}{r^2} \]
and we have $d\mathbf{s}^2 = -dt^2 + dx^2 + dy^2$.

In the flat space example above, $\mathbf{x}$ is the Killing vector. 

In (1), $\mathbf{x}$ is useful way to capture the generator of the symmetry. Closed forms for the generator of the symmetry 

\[ \mathbf{P}_x = \text{const.} \]

\[ \mathbf{A} = \left( \begin{array}{c} x \\ y \\
\end{array} \right) = \frac{\mathbf{P}_x}{r} \]

and hence the vector $\mathbf{P}_x = \text{const.}$ and hence the vector $\mathbf{A} = \left( \begin{array}{c} x \\ y \\
\end{array} \right)$ which moves the point $(\eta, \xi)$ to $(\eta + v, \xi + w)$.

From translational symmetry, follows the conservation of momentum: 

Example: Conservation of momentum.
\( v_n = (1, 1, 0, 0) \),

\( x' = x, \ y' = x, \ c' = c \), with

\( \frac{\partial^2}{\partial x^2} \),

This vertex. That is

E.g. for \( x = f(t) \) use Taylor multipole of

\( \Delta \theta = \cos \theta \) or \( \Delta \phi = \phi + \cos \theta \) \( \frac{dP}{dt} \)

\( \frac{dP}{d\phi} \)

This means that we can't use

\[ A = 2P, \ Q = SP \]

so \( \phi \)

Also, the metric doesn't depend on

\[ \left( \frac{SP}{\Phi} \right)^2 + \left( \frac{SP}{\Phi} \right)^2 = 1 = \left( \frac{SP}{\Phi} \right)^2 \]

of \( \left. \frac{d^2}{d\theta^2} \right|_{\theta = 0} = \left. \frac{d^2}{d\phi^2} \right|_{\phi = 0} \)

We found \( \Theta \) \\

in the plane passing paper coordi.

x'ft two classes, of geodesics.

Recall the example, from our