

# Streamline, path line and others

$$d\mathbf{s} \propto \mathbf{u} \quad \Rightarrow \quad \frac{dx}{u} = \frac{dy}{v} = \frac{dz}{w}$$

$$\mathbf{u}(\mathbf{r}, t) = \frac{\partial \mathbf{r}}{\partial t}(\mathbf{a}, t), \quad \mathbf{r}(\mathbf{a}, 0) = \mathbf{a}$$

$$\mathbf{r}[\mathbf{a}(\xi, \tau), t], \quad \forall \tau \leq t.$$