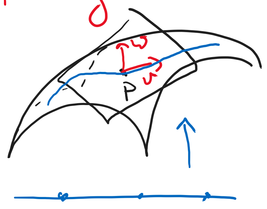
$c(t) = (x(t), y(t))$ $\quad v = (\dot{x}(t), \dot{y}(t))$

$= (p_1 + t v_1, p_2 + t v_2)$

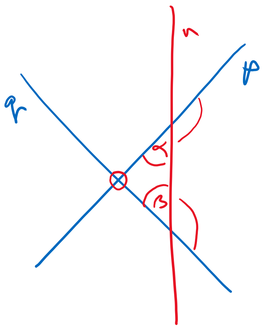
$\dot{c}(t) = (\dot{x}(t), \dot{y}(t)) = (v_1, v_2)$

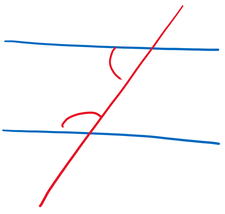


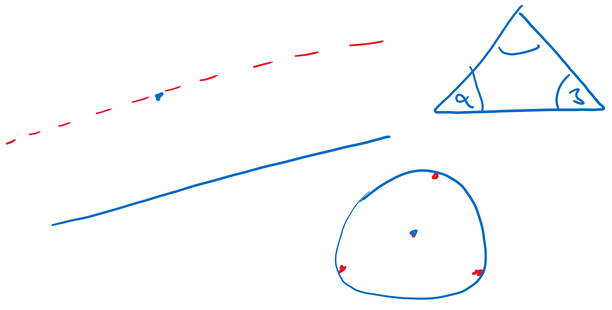
Konstant $\Leftrightarrow$

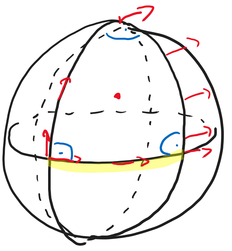
zyklen?

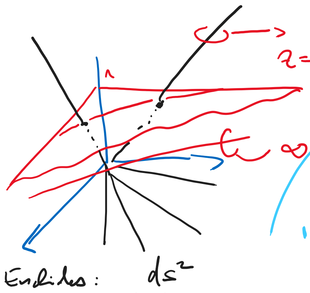
$\ddot{c} = 0$?

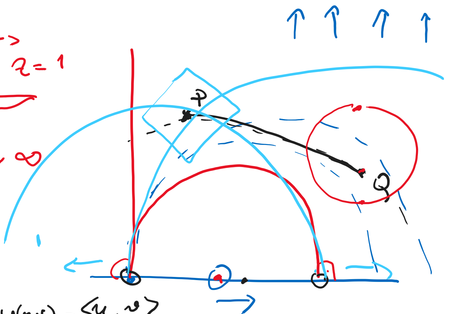








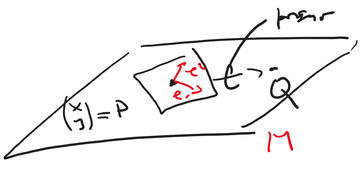




Euklides: ds^2

Poincare: $\frac{1}{y} ds^2$

$\cos \gamma(u,v) = \frac{\langle u, v \rangle}{\|u\| \|v\|}$



$M = G / SL(2, \mathbb{R})$

$= Enc(2, \mathbb{R}) / O(2, \mathbb{R})$

$\begin{pmatrix} 1 & 0 & 0 \\ x & a & c \\ y & b & d \end{pmatrix} = Aff(2, \mathbb{R}) = G$

$\begin{pmatrix} 1 & 0 & 0 \\ x & 1 & 0 \\ y & 0 & 1 \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 & 0 \\ 0 & a & c \\ 0 & b & d \end{pmatrix}$