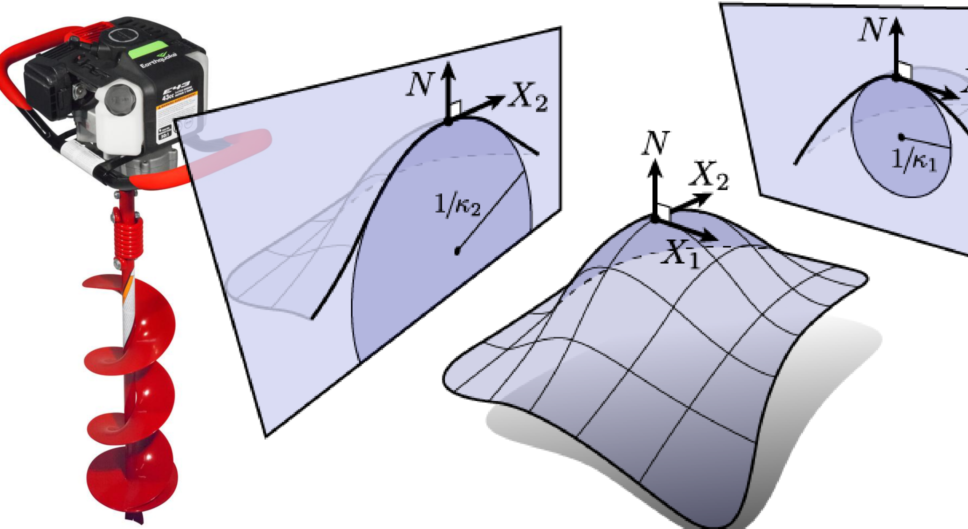
Gauss Curvature of Auger and Strake



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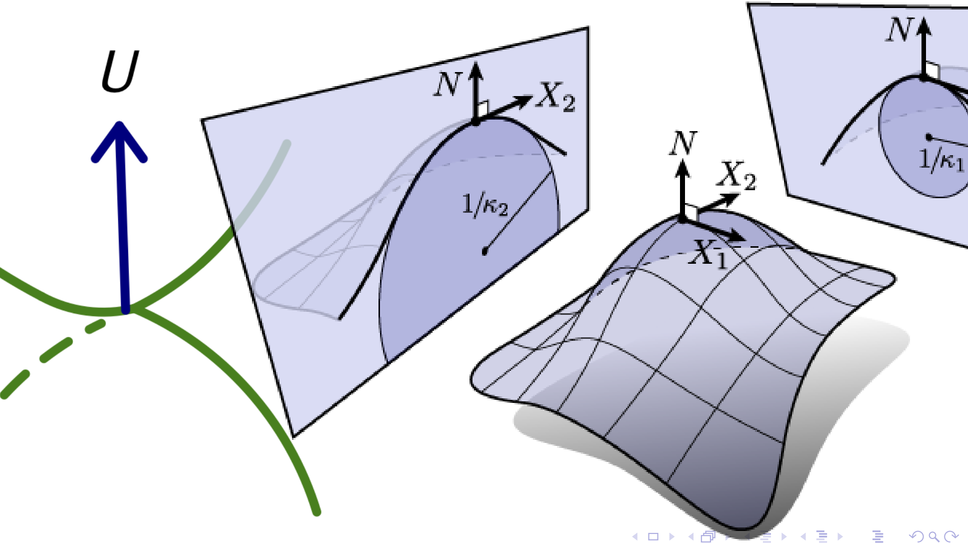
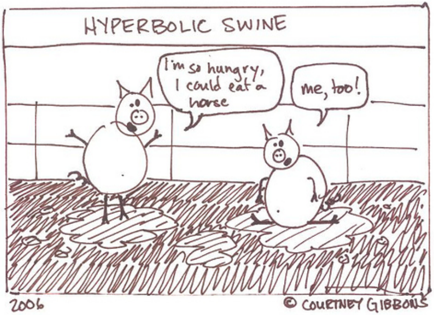
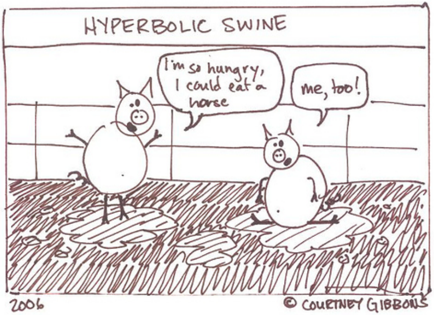
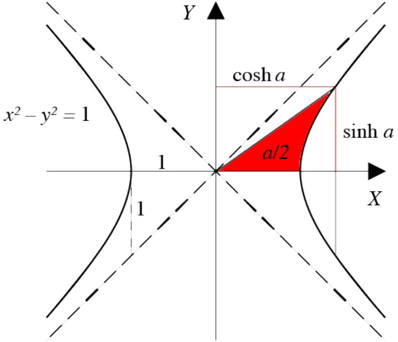


Hyperbolic Geometry



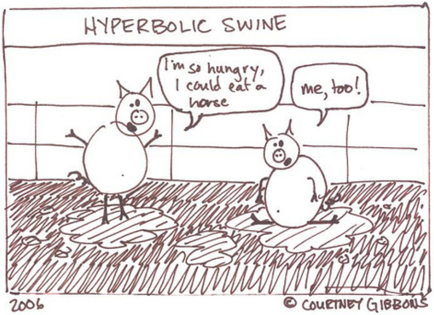
Hyperbolic Geometry

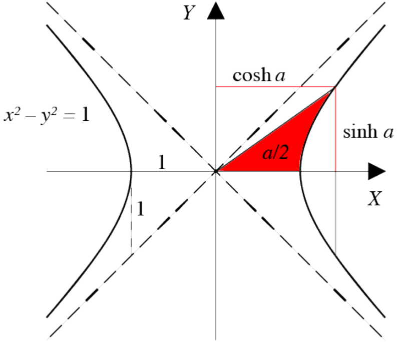




No not that geometry! (hyperbola),

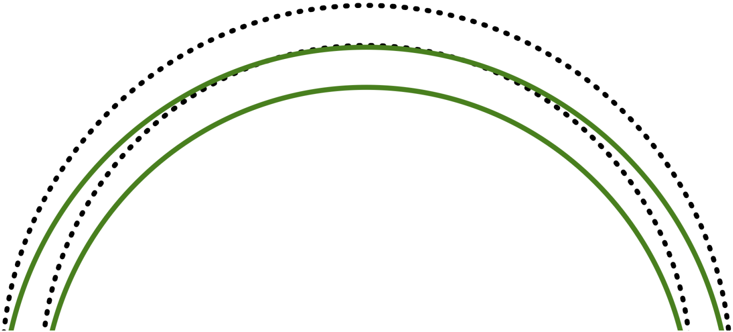
Hyperbolic Geometry





No not that geometry! (hyperbola), although is named for a hyperboloid because of a connection of one analytic model to it

Hyperbolic Geometry: Annulus Model



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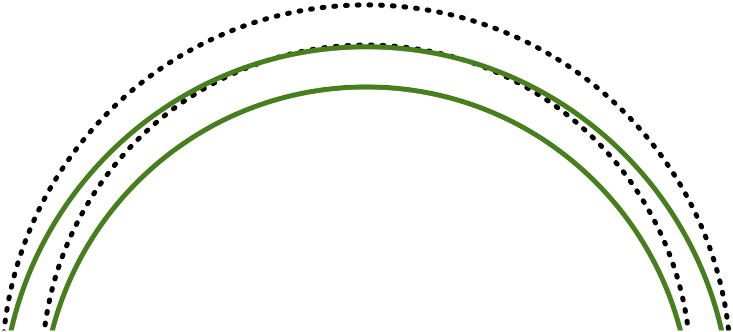
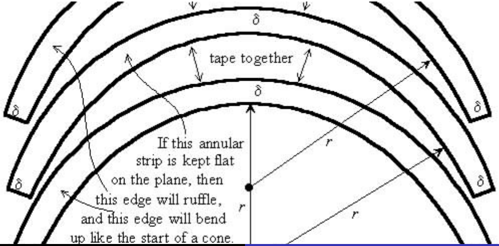
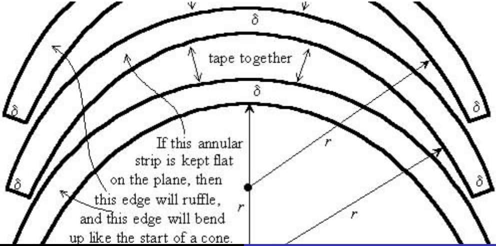




Hyperbolic Geometry: Annulus Model



- no extrinsic coordinates—no embedding

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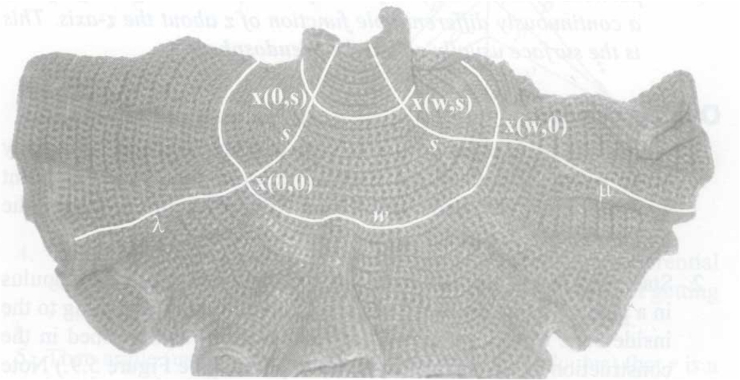
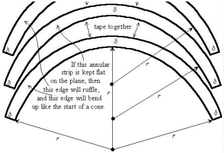
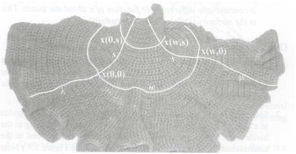


Annulus model is limit as $\delta \to 0$

- *w*–base curve horocycle
- *s* is $\perp$–λ, μ curves are (radial) geodesics by symmetry

Hyperbolic Geometry: Annulus Model Coordinates (w, s)





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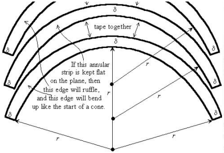

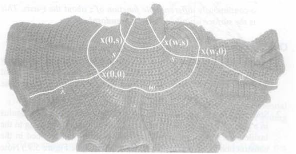

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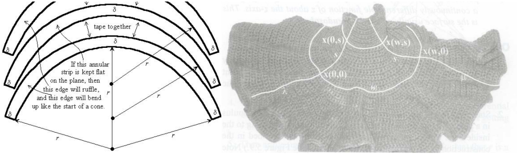

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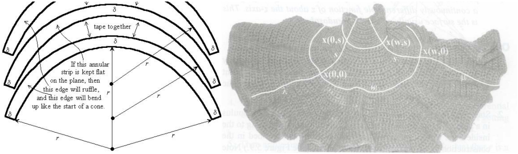
- Length decreases by $\frac{r}{r+\delta}$ each time a strip is crossed, and at $x(d, c)$ we've crossed

Hyperbolic Geometry: Annulus Model Coordinates (w, s)



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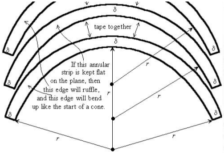
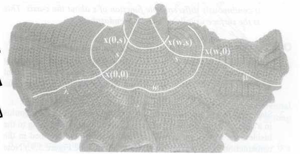
- s is $\perp$–λ, μ curves are (radial) geodesics by symmetry
- Length decreases by $\frac{r}{r+\delta}$ each time a strip is crossed, and at $x(d, c)$ we've crossed $\frac{c}{\delta}$ annular strips
- distance between λ and μ goes from d along base curve to

$$\lim_{\delta \to 0} d\left(\frac{r}{r+\delta}\right)^{\frac{c}{\delta}} = \dots$$

Hyperbolic Geometry: Annulus Model Coordinates (w, s)





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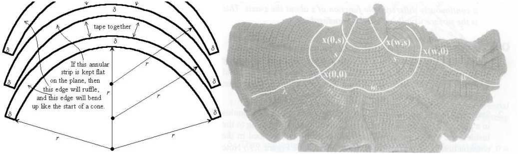

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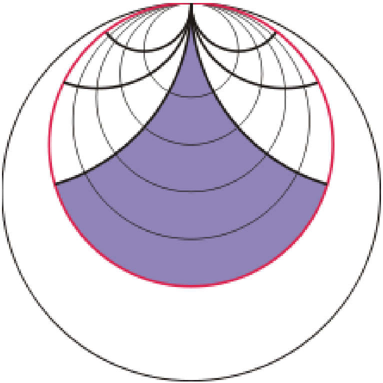
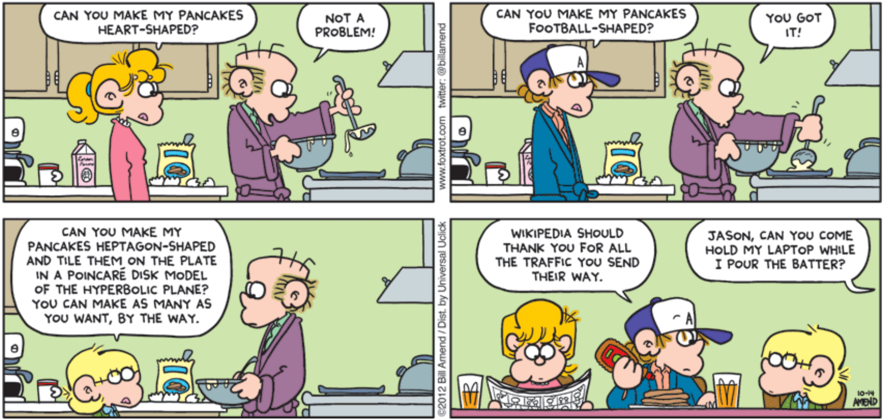
$\lim_{\delta \to 0} d(\frac{r}{r+\delta})^{\frac{c}{\delta}} = \dots = \dots = de^{-\frac{c}{r}}$

Hyperbolic Geometry: More Models

Hyperbolic Geometry: Area



Hyperbolic "Squares"


CAN YOU MAKE MY PANCAKES HEART-SHAPED?
NOT A PROBLEM!
CAN YOU MAKE MY PANCAKES FOOTBALL-SHAPED?
YOU GOT IT!
CAN YOU MAKE MY PANCAKES HEPTAGON-SHAPED AND TILE THEM ON THE PLATE IN A POINCARÉ DISK MODEL OF THE HYPERBOLIC PLANE? YOU CAN MAKE AS MANY AS YOU WANT, BY THE WAY.
WIKIPEDIA SHOULD THANK YOU FOR ALL THE TRAFFIC YOU SEND THEIR WAY.
JASON, CAN YOU COME HOLD MY LAPTOP WHILE I POUR THE BATTER?
10-14 AMEND
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