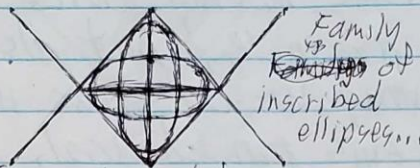
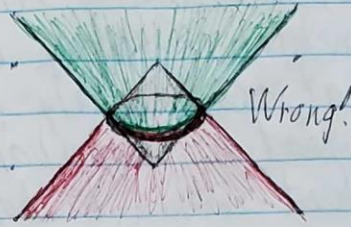
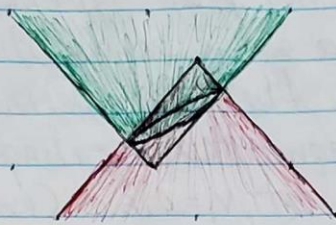


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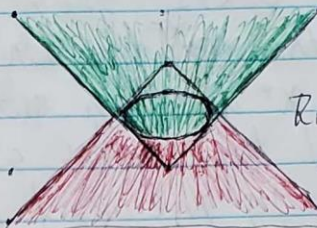
Understanding the graphical features of 2-cone SR

Terry Bollinger 2011-08-22.19:03 Mon



Family of inscribed ellipses...

Two vertical states; top point closer to viewer, or bottom



Right!

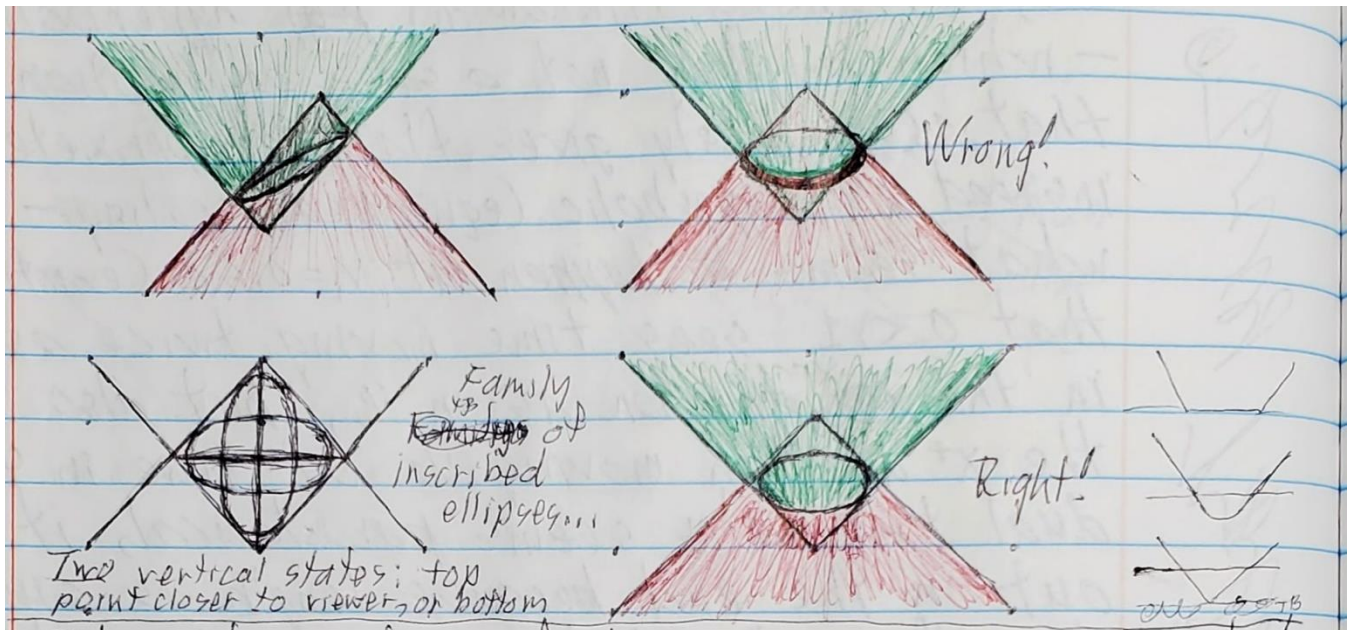
The intersection of two SR cones is described correctly, in front projection, by the family of ovals that can be inscribed within the intersection square, such that each oval touches each side of the square once and tangentially. The horizontal line (degenerate ellipse) is the  $\psi_0$  (crest) circle, seen edge on, while the vertical ellipse is when the two cone tips just touch each other's surfaces. [Question: Is the latter also a circle, just with one axis rotated into a non-3D dimension? That seems likely somehow... but hmm, what would it mean? Eg, could yz be rotated into the momentum axes  $p_y p_z$ ?

One square size - that is, keeping the vertical cone point separation distance ( $\epsilon$ ) fixed - results in the family of ellipses that describes  $\{e_x | x > 0\}$ , that is, all of the  $x^\pm$  frames as viewed from  $\psi_0$ . (Vertical lines represent two states). 19:02

[2011-08-22.18:11 Mon>

[19:03]

[Understanding the graphical features of the 2-cone SR]



(Fig a)

(Fig b) Wrong!

(Fig c) Family of inscribed ellipses...  
Two vertical states: top point closer to viewer, or bottom

(Fig c) Right!

The intersection of the two SR cones is described correctly, in front projection, by the family of ovals that can be inscribed within the intersection squared, such that each oval touches each side of the square once and tangentially. The horizontal line (degenerate ellipse) is the vertical  $\varphi_0$  (rest) circle, seen edge on, while the vertical ellipse is when the two cone tips just touch each other's surfaces.  
 [Question: Is the latter also a circle, just with one axis rotated into a non-3D dimension? That seems likely somehow... but hmm, what would it mean? E.g., could  $yz$  be rotated into the momentum axes  $p_y p_z$ ?

One square size — that is, keeping the vertical cone point separation distance ( $t$ ) fixed — results in the family of ellipses that describes  $\{\varphi_x | x(> 0)\}$ , that is, all of the  $x^\pm$  frames as viewed from  $\varphi_0$ . (Vertical lines represent two states.) [19:02]

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