

# Tarea N1

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Ejercicio: Mostrar que:a

$$i) \gamma\beta = \sinh\varsigma$$

$$ii) \gamma = \cosh\varsigma$$

$$iii) A'_0 B'_0 - \vec{A}' \cdot \vec{B}' = A_0 B_0 - \vec{A} \cdot \vec{B}$$

$$\text{i) } \gamma\beta = \text{Sinh}\varsigma$$

Sabemos que:

$$\beta = \tanh\varsigma. \quad (1)$$

$$\gamma = \frac{1}{\sqrt{1 - \beta^2}}. \quad (2)$$

$$i) \gamma\beta = \sinh\varsigma$$

Por lo que:

$$\begin{aligned}\gamma\beta &= \frac{\beta}{\sqrt{1-\beta^2}} \\ &= \frac{\tanh\varsigma}{\sqrt{1-\varsigma^2}} \\ &= \frac{\tanh\varsigma}{\sqrt{\operatorname{sech}^2\varsigma}} \\ &= \frac{\tanh\varsigma}{\operatorname{sech}\varsigma} \\ &= \sinh\epsilon\end{aligned}$$

$$\text{i) } \gamma\beta = \sinh\varsigma$$

por lo tanto

$$\gamma\beta = \sinh\varsigma \quad (3)$$