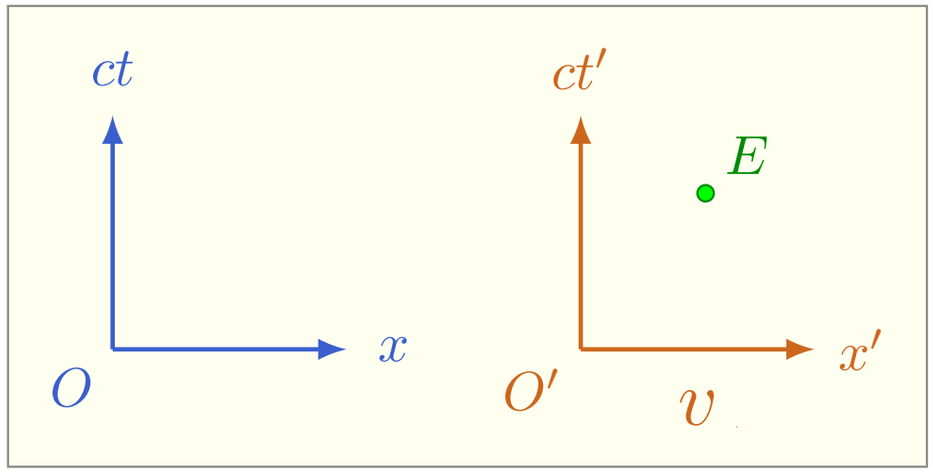
# Física IV

7 dezembro

Relatividade restrita

# Relatividade restrita
## Transformação de Lorentz




$$\begin{bmatrix} ct' \\ x' \end{bmatrix} = \begin{bmatrix} \dfrac{1}{\sqrt{1-\dfrac{v^2}{c^2}}} & -\dfrac{v/c}{\sqrt{1-\dfrac{v^2}{c^2}}} \\ -\dfrac{v/c}{\sqrt{1-\dfrac{v^2}{c^2}}} & \dfrac{1}{\sqrt{1-\dfrac{v^2}{c^2}}} \end{bmatrix} \begin{bmatrix} ct \\ x \end{bmatrix}$$

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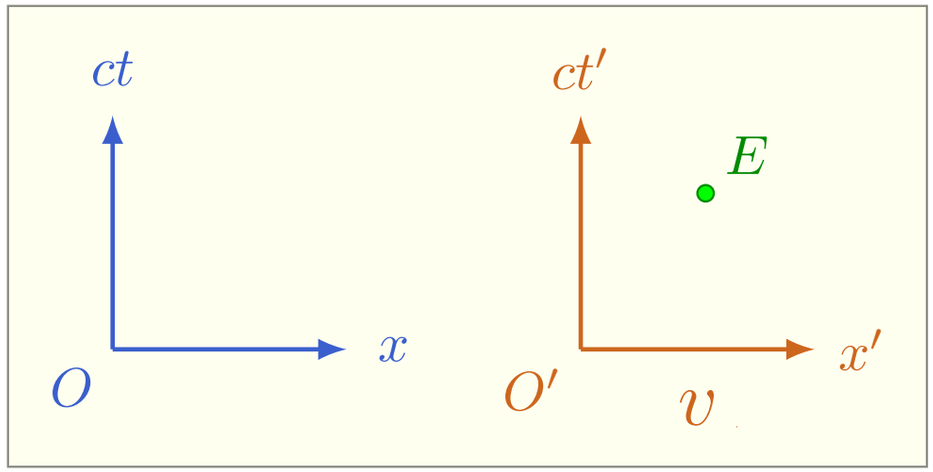


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$$\gamma \equiv \frac{1}{\sqrt{1-\dfrac{v^2}{c^2}}}$$

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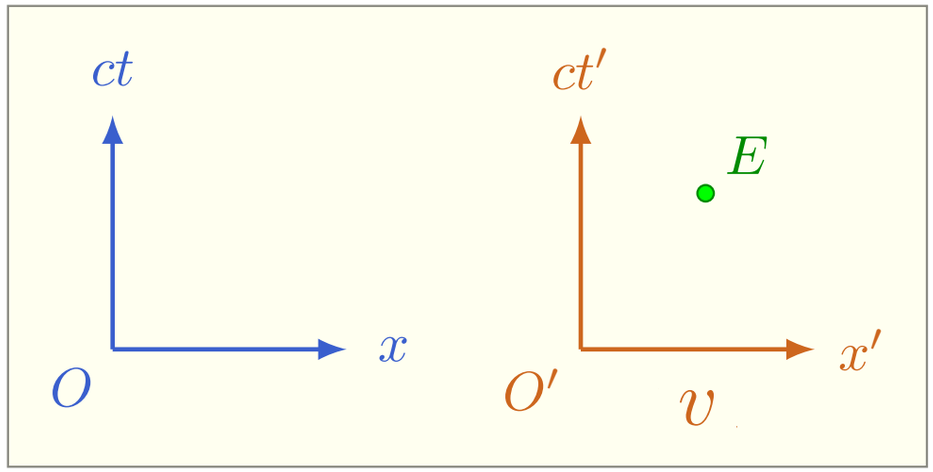


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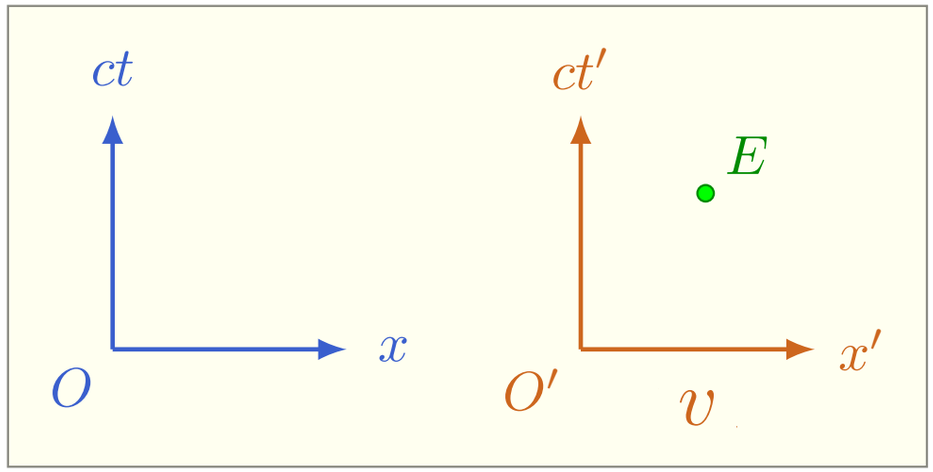
# Relatividade restrita
## Transformação de Lorentz

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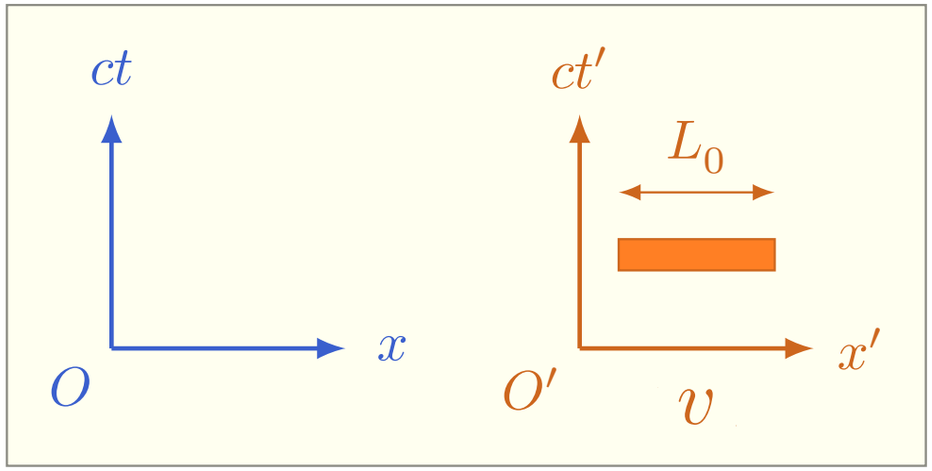
# Pratique o que aprendeu

$L = ?$

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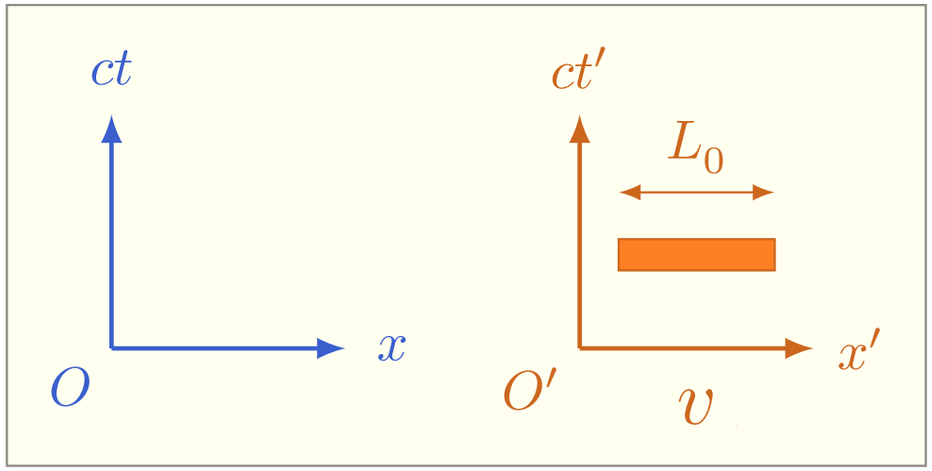
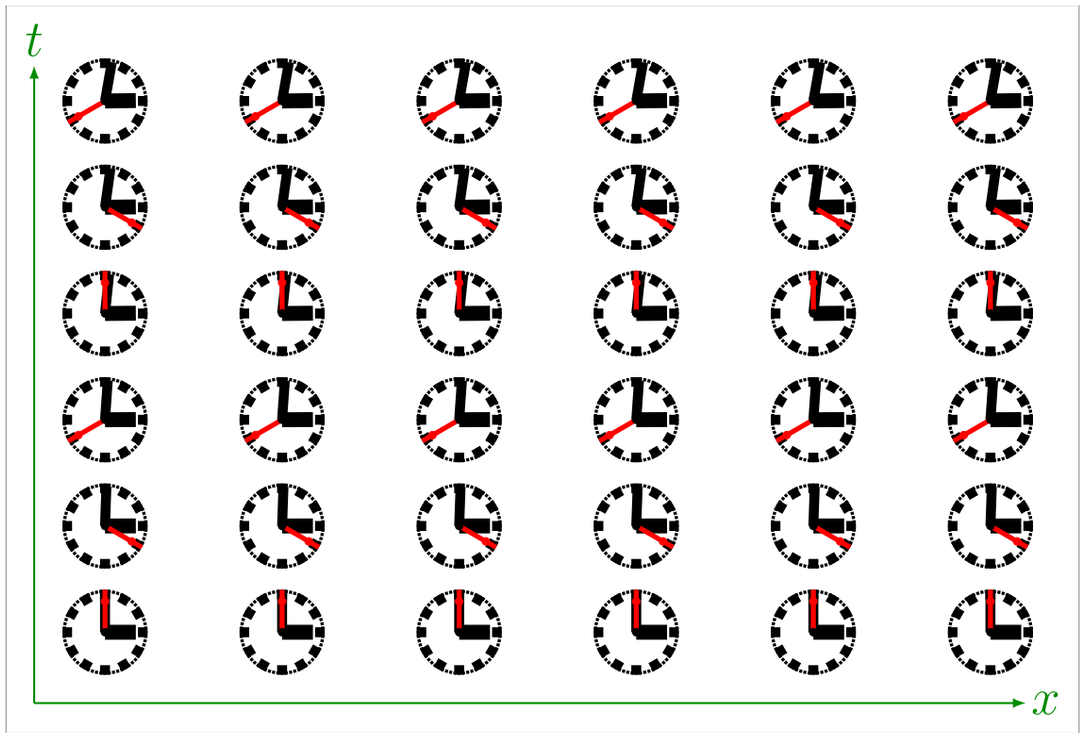
## Ferramentas experimentais

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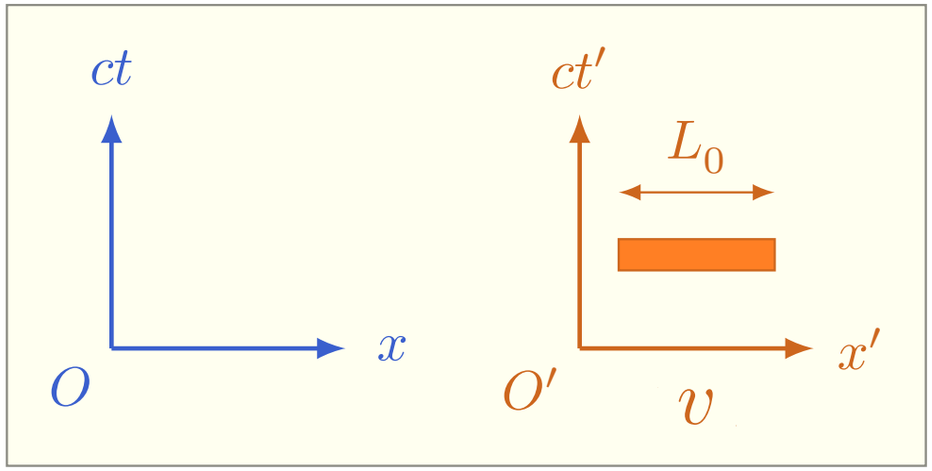
$x'_d = L_0$

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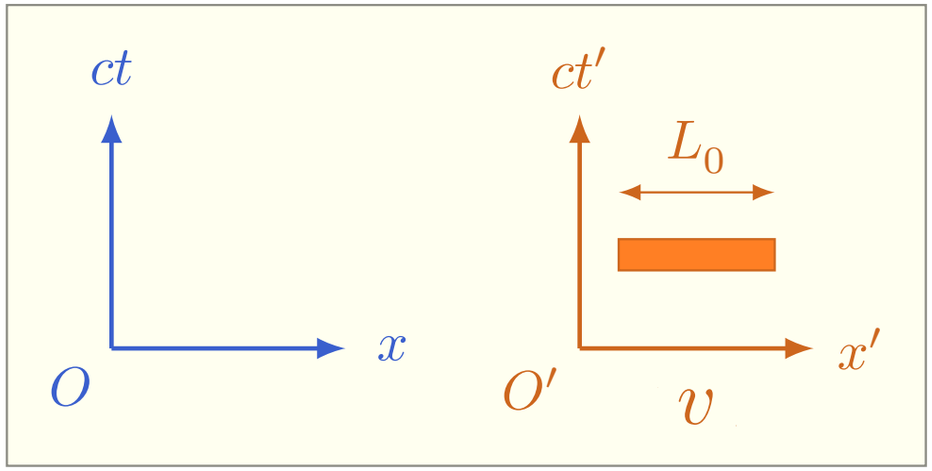


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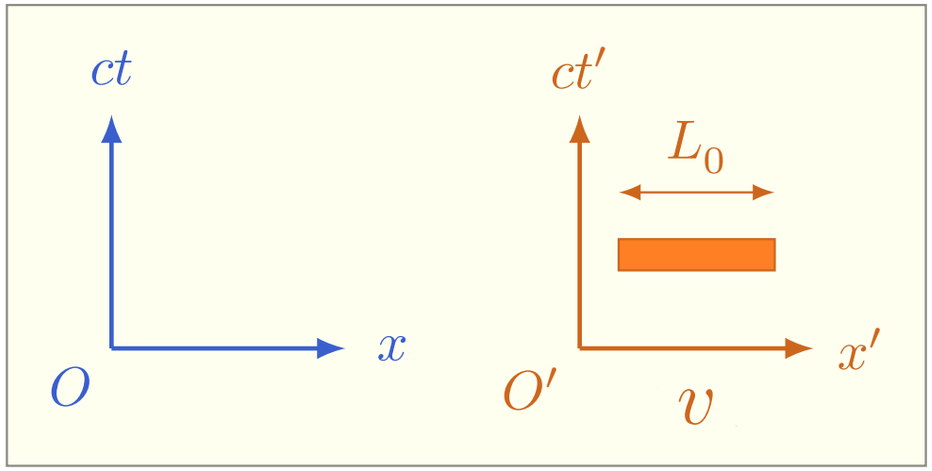


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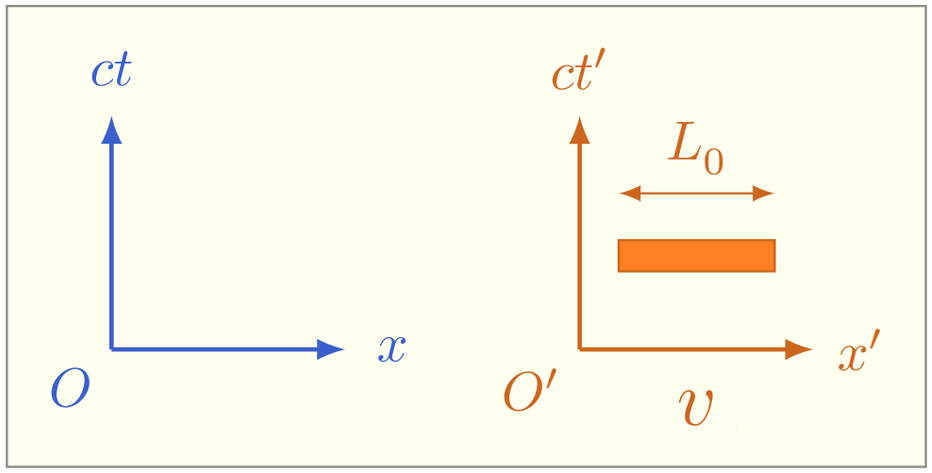


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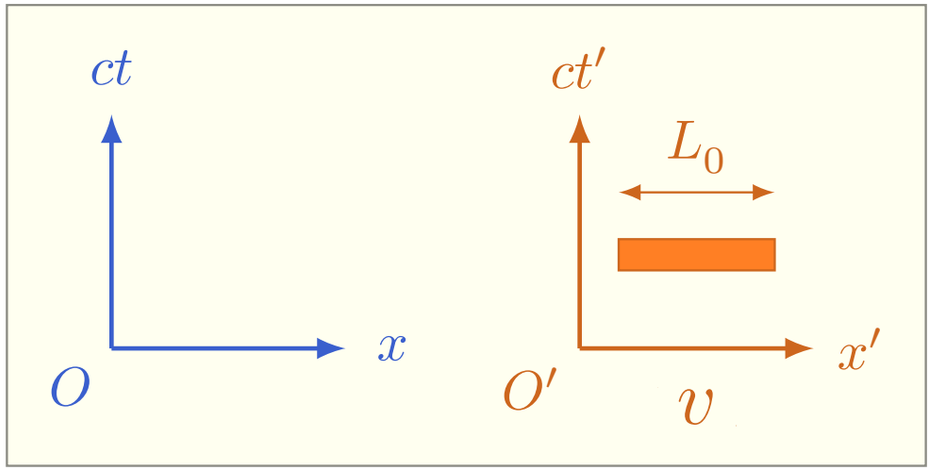


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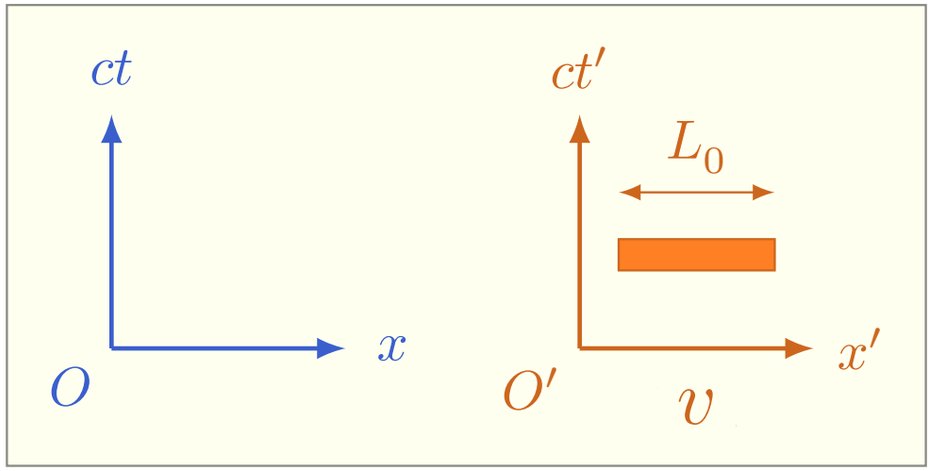
$$L = \frac{L_0}{\gamma}$$

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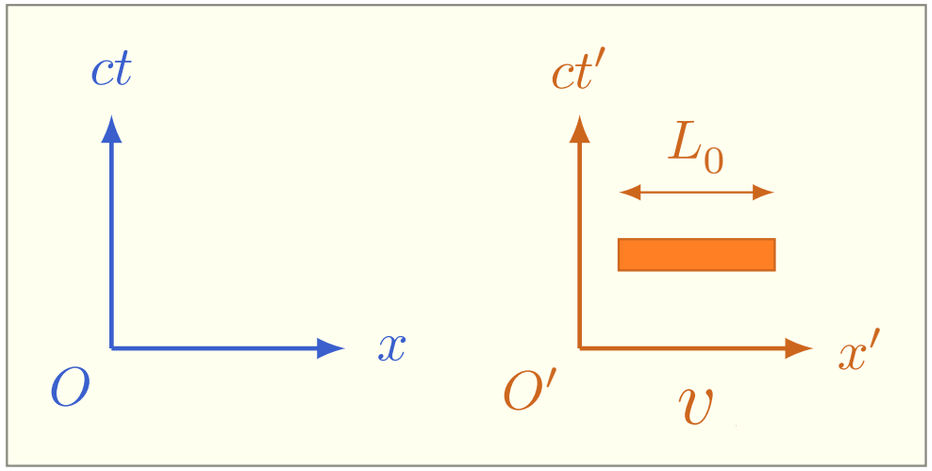


$$L = \frac{L_0}{\gamma} < L_0$$

Contração espacial

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