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collection ... Representation theory of the Lorentz group - Wikipedia 4.1. THE LORENTZ GROUPS $O(N,1)$, $SO(N,1)$ AND $SO_0(N,1)$ 285 Theorem 4.4 (really, the version for $SO_0(1,n)$) shows that the Lorentz group $SO_0(1,3)$ is generated by the matrices of the form $\begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & P & 0 & 0 \\ 0 & 0 & B & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$ with $P \in SO(3)$ and the matrices of the form $\begin{pmatrix} \cosh \epsilon & \sinh \epsilon & 0 & 0 \\ \sinh \epsilon & \cosh \epsilon & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$. This fact will be useful when we prove that the homo ... Chapter 4 The Lorentz Groups Lorentz group and its representations The Lorentz group starts with a group of four-by-four matrices performing Lorentz transformations on the four-dimensional Minkowski space of $(t; z; x; y)$. The transformation leaves invariant the quantity $(t^2 - z^2 - x^2 - y^2)$. There are three generators of rotations and three boost generators. Thus, the Lorentz group ... Physics of the Lorentz Group LORENTZ GROUP AND LORENTZ INVARIANCE when projected onto a plane perpendicular to β in either frames. The transformation (1.9) is thus correct for the specific relative orientation of two frames as defined here, and such

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