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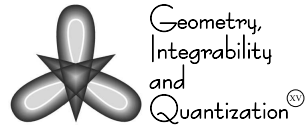

VECTOR PARAMETERS IN CLASSICAL HYPERBOLIC GEOMETRY

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Abstract. Here we use an extension of *Rodrigues' vector parameter* construction for pseudo-rotations in order to obtain explicit formulae for the generalized *Euler* decomposition with arbitrary axes for the structure groups in the classical models of hyperbolic geometry. Although the construction is projected from the universal cover $\mathsf{SU}(1,1) \simeq \mathsf{SL}(2,\mathbb{R})$, most attention is paid to the $2{+}1$ *Minkowski* space model, following the close analogy with the *Euclidean* case, and various decompositions of the restricted *Lorentz* group $\mathsf{SO}^{+}(2,1)$ are investigated in detail. At the end we propose some possible applications in *special relativity* and *scattering theory*.

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