

**A view of to the Tangent Sphere Bundle of 2-Sphere via the Euler Transformation
Matrices and Quaternion**

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Abstract. In this study, we examined that the relations between the tangent sphere bundle of the unit 2-sphere and both the Euler Transformation Matrices and quaternions on the unit 3-sphere. Then, we showed that the induced metric of the restricted region of 3-sphere with radius 2 obtained by the Euler rotational sequences XYX is equal to the Sasaki Riemann metric on the tangent sphere bundle of the unit 2-sphere. Finally, we calculated the general geodesic equations of the tangent sphere bundles of the unit 2-sphere

Keywords. The Tangent Sphere Bundle, The Euler Transformations Matrices, Quaternions.

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