



## SPATIAL ROTATION IN CARTESIAN COORDINATES

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### Abstract

We study the transformation properties of scalar and vector fields together with their derivatives under the spatial rotation groups  $SO(2)$  and  $SO(3)$ . We express the transformation properties in Cartesian coordinates. The work has been developed from the need to study of the transformation properties of the fractional derivative under spatial rotation.

**Keywords and phrases:** spatial rotation, scalars, vectors, fractional derivative.

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