Motions in Space: A Composition

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A (rigid) *motion* in a 3-dimensional Euclidean space $\mathbb{E}$ is a distance preserving transformation on $\mathbb{E}$.

Motions form a 6-dimensional group, and orientation preserving motions fixing a point form a 3-dimensional subgroup, denoted by SO_3.

An element of SO_3 is represented as a unit tangent vector on the sphere S^2. We show how to find an eigen vector of an orthogonal matrix.

Composition of two rotations will be described.