

Definition (Special orthogonal group $\text{SO}(n)$). The special orthogonal group of order n , written $\text{SO}(n)$, is the group of $n \times n$ square matrices that satisfy

$$\mathbf{M}\mathbf{M}^\top = \mathbf{M}^\top\mathbf{M} = \mathbb{1}$$

and $\det(\mathbf{M}) = 1$.