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Round metric on S^2

Definition. Round metric on S^2

The round metric $\langle , \rangle_{S^2}$ on S^2 is the pullback of the flat metric $\langle , \rangle$ on $\mathbb{R}^3$ through the inclusion $S^2 \hookrightarrow \mathbb{R}^3$.

It is the unique complete Riemannian metric with constant sectional curvature $+1$.

- geodesics are great circles
- isometry group is

$$O(3)$$

- diameter $= \pi$
- does not admit any parallel vector field (Hairy ball theorem)

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