$$
\begin{aligned}
(\mathbb{S}^3 \setminus \{(0,-i)\}, \alpha_{\mathbb{S}^3}) &\to (\mathbb{R}^3, dz' + x'dy' - y'dx') \cong \mathbb{C} \times \mathbb{R}; \\
(z_1, z_2) &\mapsto \left(\tfrac{iz_1}{i+z_2}, \tfrac{-\Re(z_2)}{|i+z_2|^2} \right); \\
(\cos\theta, \sin\theta) &\mapsto \left(\tfrac{\cos\theta}{1+\sin^2\theta} \tfrac{\cos\theta\sin\theta}{1+\sin^2\theta} \tfrac{-\sin\theta}{1+\sin^2\theta} \right).
\end{aligned}
$$