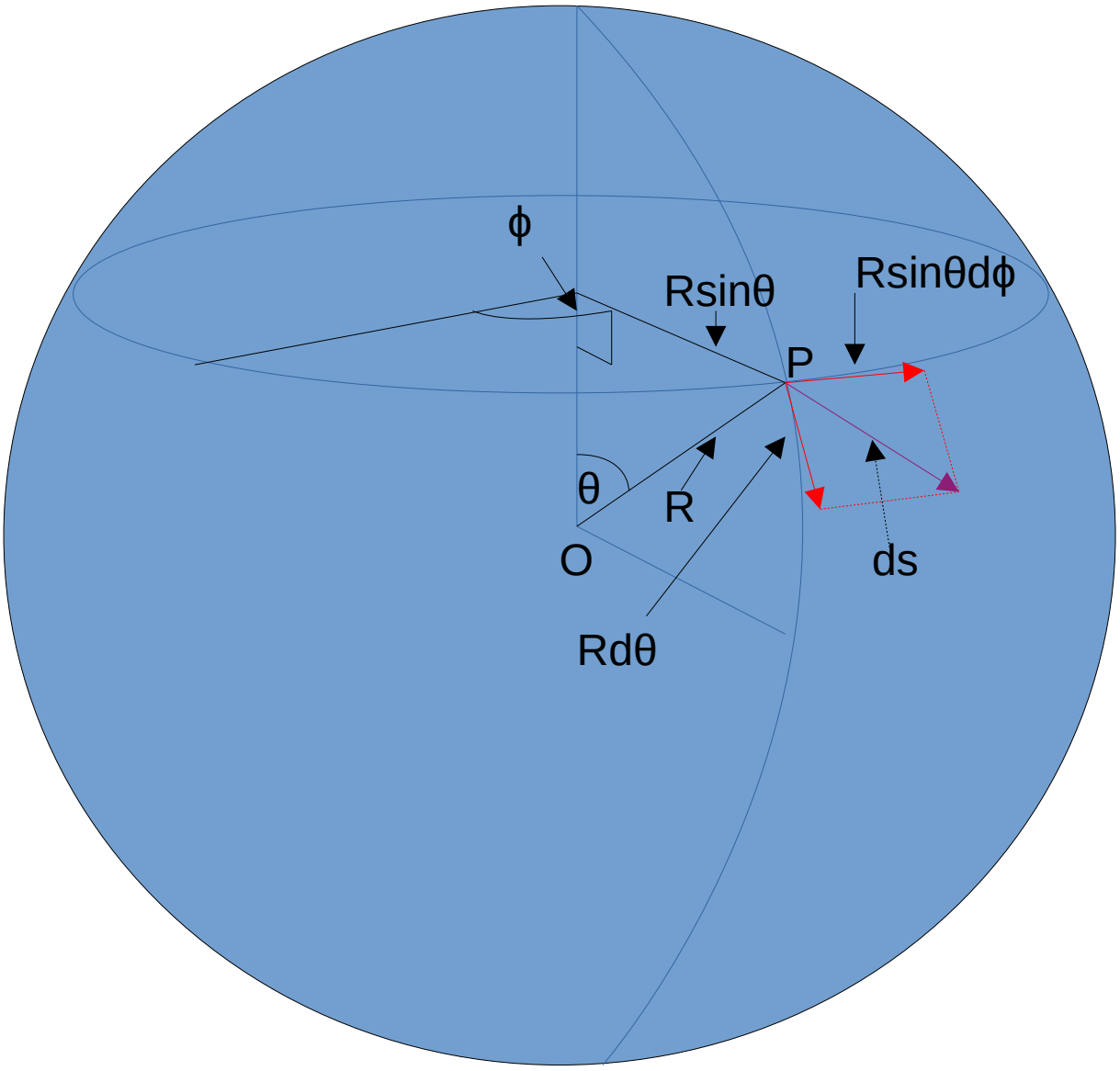
# The surface of a sphere

The metric for a line element ds on the surface of a sphere of radius R

$$ds^2 = R^2 d\theta^2 + R^2 \sin\theta^2 d\phi^2$$




The line element ds, and its components Rsinθdϕ and Rdθ, are infinitely small, and are perpendicular to the radius R at the point P