

Copilot

The $-\text{np.pi}/2$ term is used to convert between different conventions for spherical coordinates.

In the convention you're using (sometimes referred to as the geographical convention), ϕ is the angle from the xy-plane towards the z-axis. This means ϕ is 0 along the xy-plane and increases to $\pi/2$ (90 degrees) along the positive z-axis.

However, in the convention used by the `Rotation` class in `scipy.spatial.transform` (and many other mathematical contexts), the polar angle is measured from the positive z-axis towards the xy-plane. This means the angle is 0 along the positive z-axis and increases to $\pi/2$ along the xy-plane.

So, to convert from your convention to the one used by `Rotation`, we subtract $\pi/2$ from ϕ . This effectively rotates the system so that an angle of 0 lies along the xy-plane, as expected by the `Rotation` class.

I hope this clears up the confusion. Let me know if you have any other questions! 😊