

Outline:

The radiance was provided in the units: Watts/Metre²/Micrometre/Steradian.

Using the Stefan-Boltzmann Law and assuming a length scale of 1km, we calculate the temperature of the region of the sea with radiance R as $(R \cdot (10^{17})/5.67)^{1/4}$. Averaging this quantity over all locations, yields the Temperature of the Ocean: 294.512K.