30 Before a thunderstorm, the hairs on your head sometimes stand on end.

A hair with mass 0.50 mg and charge 1.0 pC is supported by a force due to an electric field. Ignore any forces other than the weight of the hair and the electric force.

What is the electric field strength?

A $4.9 \times 10^3 \, \text{N} \, \text{C}^{-1}$

B $4.9 \times 10^5 \, \text{N} \, \text{C}^{-1}$

C $4.9 \times 10^6 \, \text{N} \, \text{C}^{-1}$

D $4.9 \times 10^9 \, \text{N} \, \text{C}^{-1}$