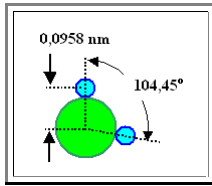


Exercise 3.2-1 Maximum Polarization of Water

Looking into some standard reference book with numbers, e.g. the "*CRC Handbook of Chemistry and Physics*", you find that the structure of a water molecule and its dipole moment is



$$\mu_{\text{water}} = 1,87 \cdot 10^{-18} \text{ e.s.u.}$$

Illustration

- 1. How large would the *dielectric constant* of water be if *all* water dipoles are completely oriented into the field direction? Or, if you realize right away that this question doesn't make much sense:
- 1a. How large would the *polarization* of water be if *all* water dipoles are completely oriented into the field direction?
- And what, for gods sake, are **e.s.u.**?

Link to the [solution](#)