

9. According to Eq. 26-17 the capacitance of a spherical capacitor is given by

$$C = 4\pi\epsilon_0 \frac{ab}{b-a} ,$$

where a and b are the radii of the spheres. If a and b are nearly the same then $4\pi ab$ is nearly the surface area of either sphere. Replace $4\pi ab$ with A and $b - a$ with d to obtain

$$C \approx \frac{\epsilon_0 A}{d} .$$