



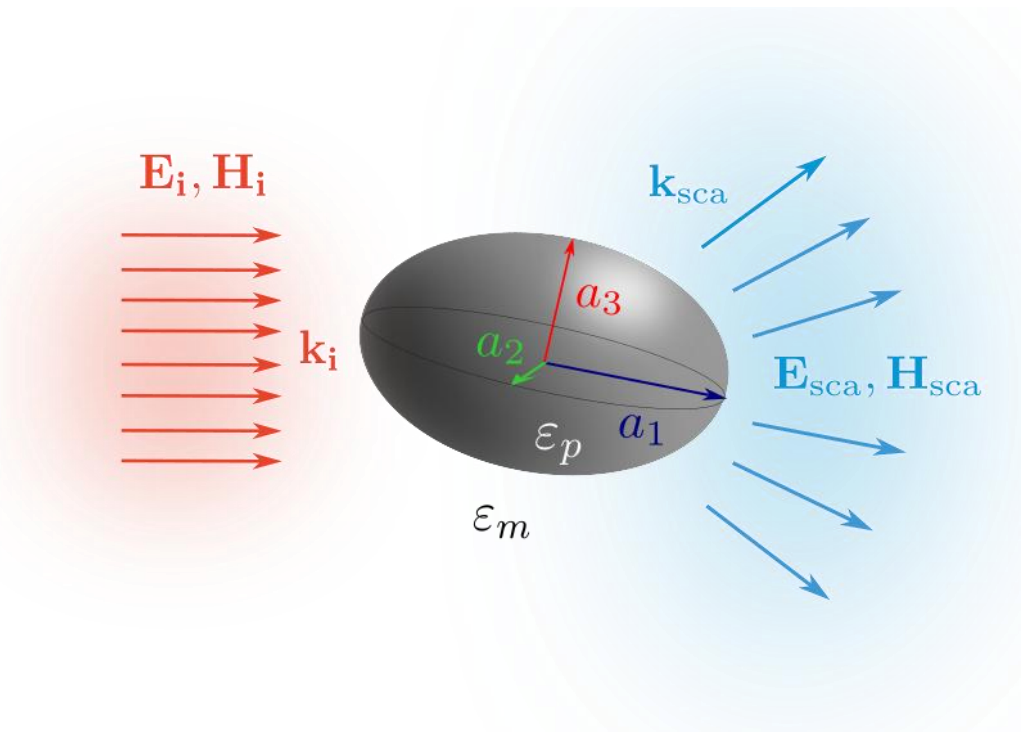
Facultad de
Ciencias
UNAM

Congreso Nacional de Física 2025
Toluca, Estado de México

Resonancias plasmónicas dipolares en nanoelipsoides: análisis de contribuciones interbanda e intrabanda en el régimen cuasiestático

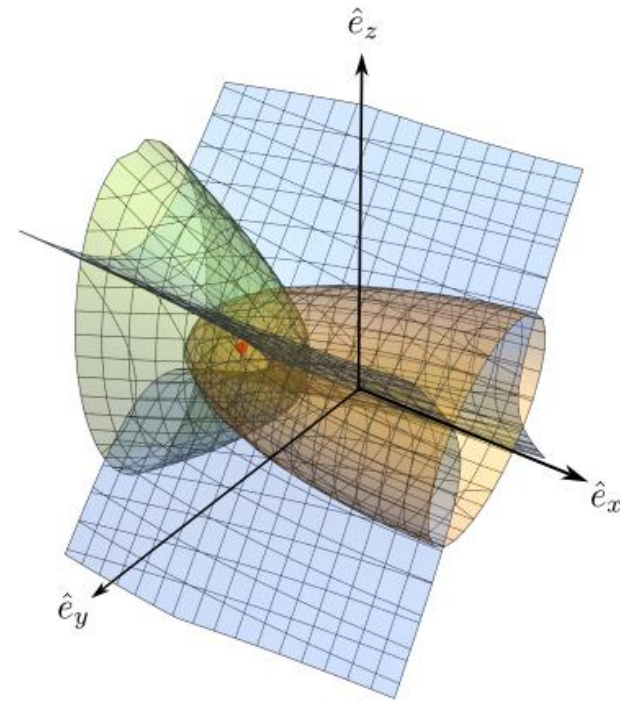
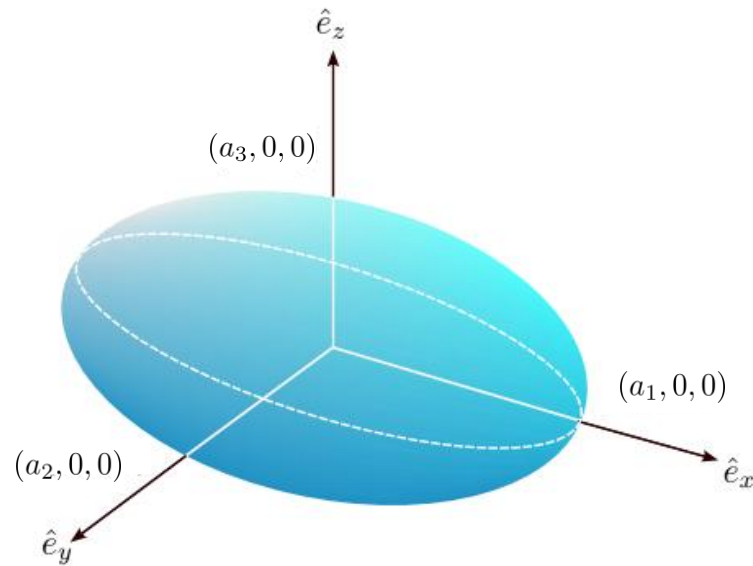
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Ecuación de Laplace

$$\nabla^2 \phi = (\eta - \zeta) f(\xi) \frac{\partial}{\partial \xi} \left(f(\xi) \frac{\partial \phi}{\partial \xi} \right) + (\zeta - \xi) f(\eta) \frac{\partial}{\partial \eta} \left(f(\eta) \frac{\partial \phi}{\partial \eta} \right) + (\xi - \eta) f(\zeta) \frac{\partial}{\partial \zeta} \left(f(\zeta) \frac{\partial \phi}{\partial \zeta} \right) = 0$$
$$-\infty < \xi < a_3^2 < \eta < a_2^2 < \zeta < a_1^2$$

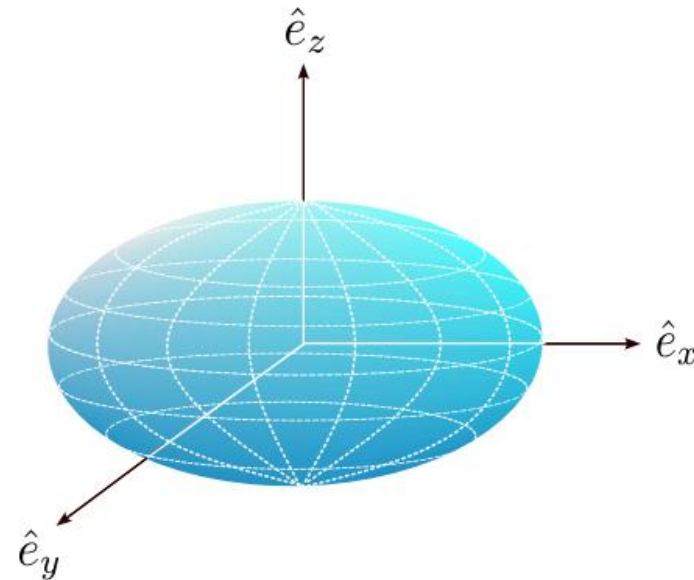
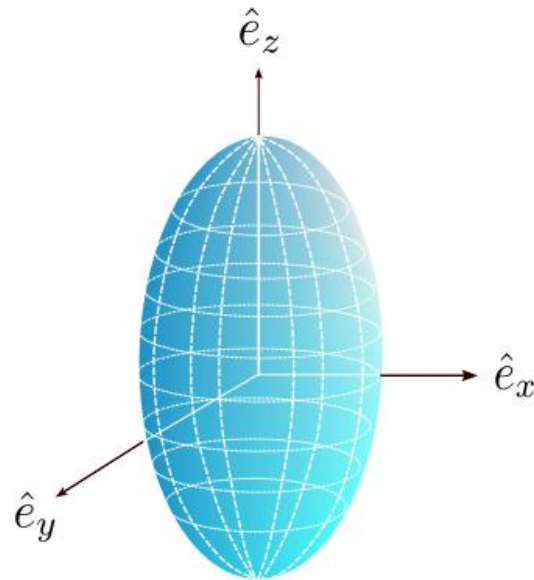


Factores geométricos

$$\alpha_j = V \frac{\varepsilon_p - \varepsilon_m}{\varepsilon_m + L_j(\varepsilon_p - \varepsilon_m)}$$

$$L_j = \frac{a_1 a_2 a_3}{2} \int_0^\infty \frac{dq}{(a_j^2 + q)f(q)}$$

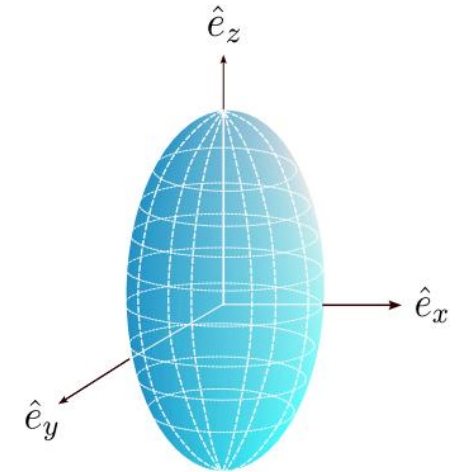
$$f(q) = \sqrt{(a_1^2 + q)(a_2^2 + q)(a_3^2 + q)}$$



Factores geométricos

Esferoides prolatos:

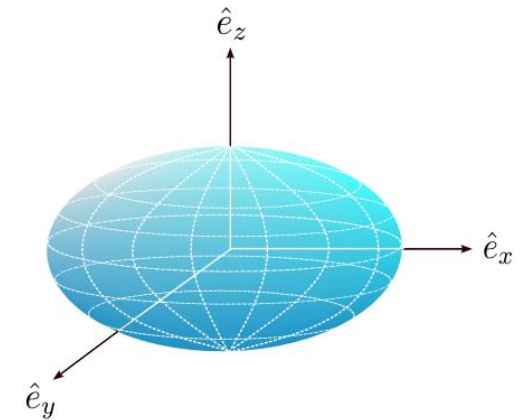
$$L_1 = \frac{1 - e^2}{e^2} \left[-1 + \frac{1}{2e} \left(\ln \frac{1+e}{1-e} \right) \right] \quad \text{con} \quad e^2 = 1 - \frac{a_2^2}{a_1^2}.$$



Esferoides oblatos:

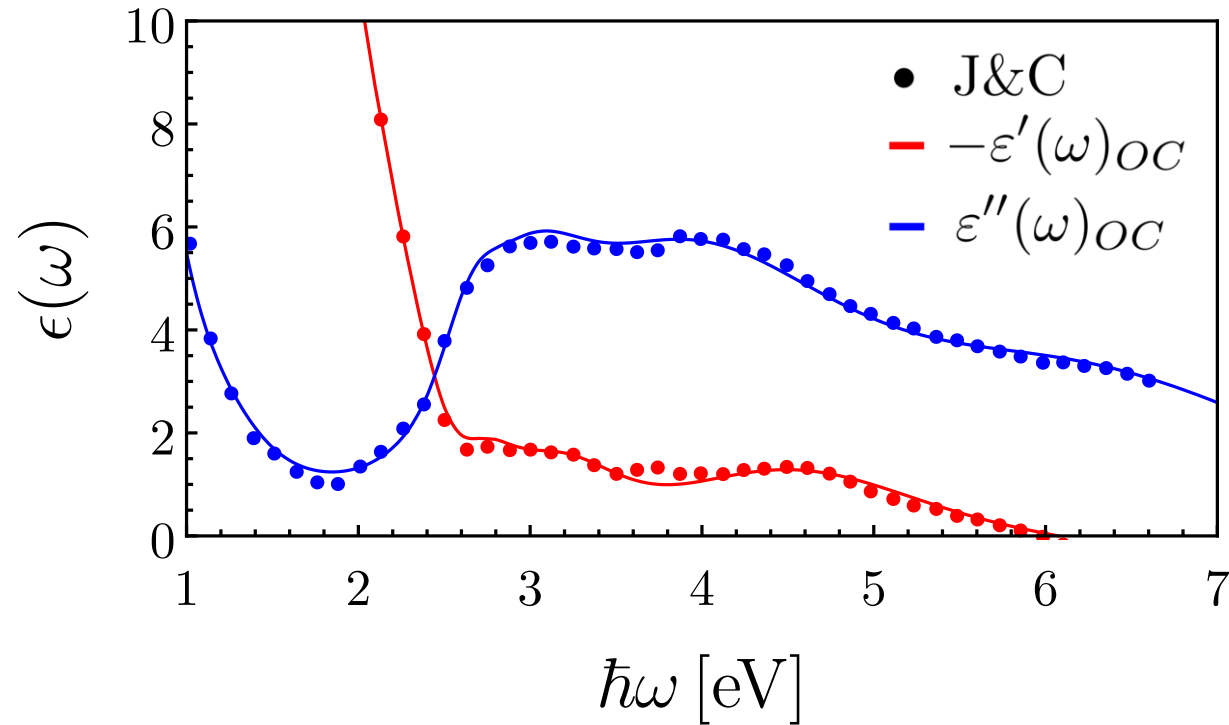
$$L_1 = \frac{g(e)}{2e^2} \left[\frac{\pi}{2} - \tan^{-1} g(e) \right] - \frac{g^2(e)}{2},$$

con $g(e) = \left(\frac{1 - e^2}{e^2} \right)^{1/2}, \quad e^2 = 1 - \frac{a_3^2}{a_1^2}.$



Funciones dieléctricas

Oro



Aluminio

