

## Task

1. Read relevant material from the book by Orfanidis: Chapter 24 until 24.5, including; Chapter 25 until 25.3, including (one may skip 25.2).

[/https://eceweb1.rutgers.edu/~orfanidi/ewa](https://eceweb1.rutgers.edu/~orfanidi/ewa)

There is a link at the bottom of that webpage

" The entire book is freely available in PDF [2-up format](#), and in PDF [1-up format](#). "

2. Find the currents  $I_1$  and  $I_2$  on two parallel scattering dipoles having a length of half a wavelength  $\lambda/2$ , as a function of the distance  $d$  between them, for a given incident plane wave with angle of incidence  $\theta_{in}$  and a given polarization (see figure below). To make things easier:
  - 2.1. You may choose trivial load ( $Z_L = 0$ ) on the dipoles problem only for it
  - 2.2. You may choose a single angle of incidence and solve the problem only for it (e.g.  $\theta_{in} = 0$ )
  - 2.3. You may choose a single polarization (e.g.  $\hat{z}$ ) and solve the problem only for it
3. Plot the currents (magnitude and phase) as a function of their distance  $d$

