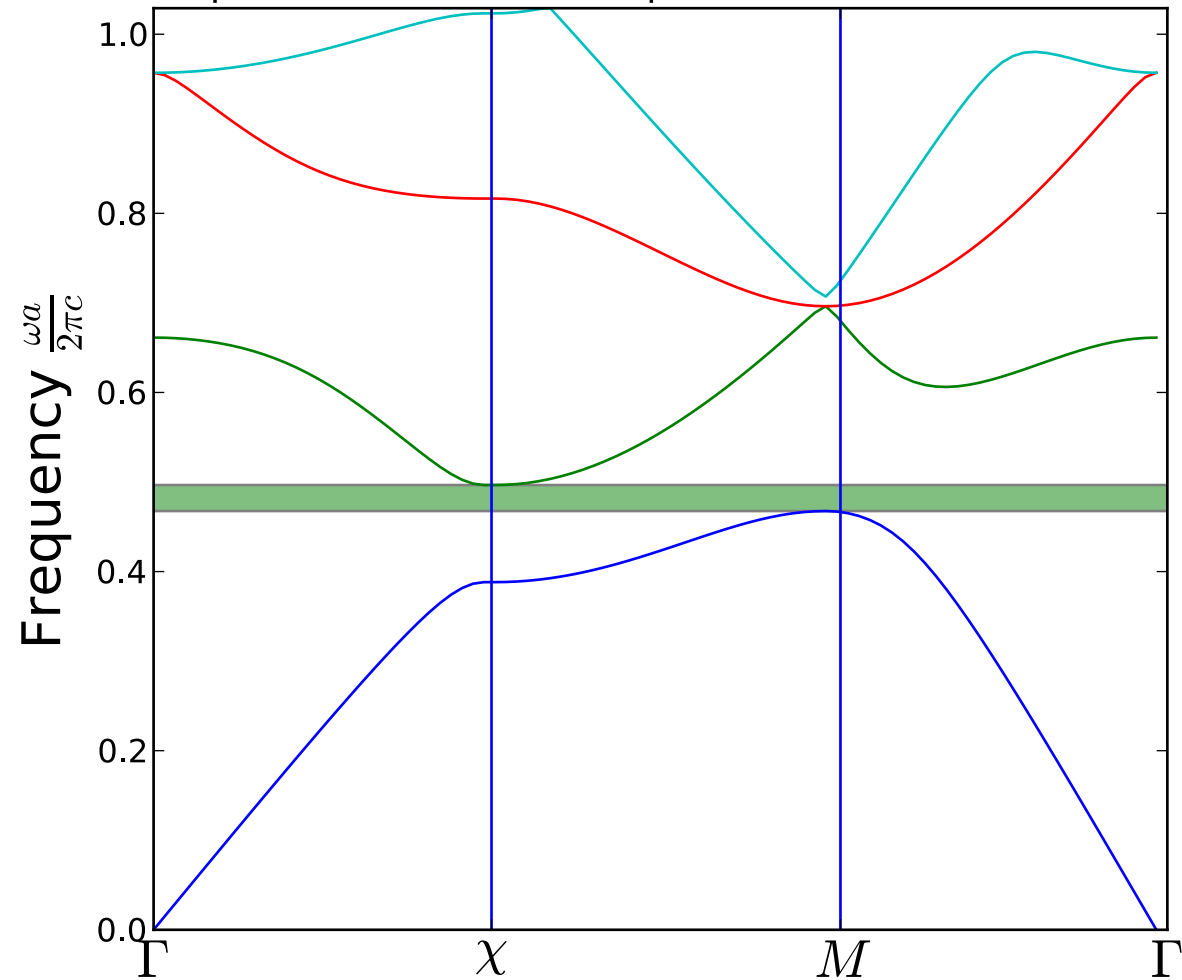


Dispersion relations for Square lattice where $r/a = 0.1$



$\frac{\Delta\omega}{\omega_m} = 6.03\%$

