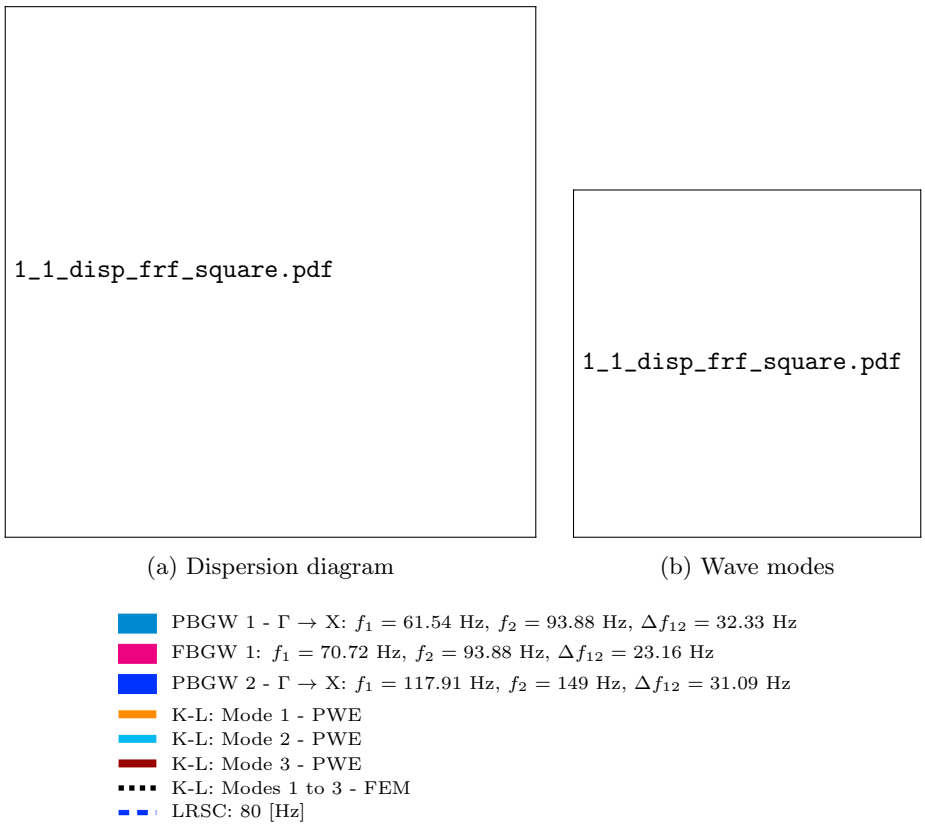

(a) Dispersion diagram (b) Wave modes

Figure 1: Band structure and wave mode shapes for a square lattice unit cell with single resonator ($f_r = 80$ Hz) in a thin plate. (a) Dispersion diagram computed with PWE and FEM methods along M–Γ–X–M showing FBGW 1 ($f_1 = 70.72$ Hz, $f_2 = 93.88$ Hz, $\Delta f_{12} = 23.16$ Hz), PBGW 1 (Γ → X: $f_1 = 61.54$ Hz, $f_2 = 93.88$ Hz, $\Delta f_{12} = 32.33$ Hz), and PBGW 2 (Γ → X: $f_1 = 117.91$ Hz, $f_2 = 149$ Hz, $\Delta f_{12} = 31.09$ Hz). (b) Wave mode shapes at points A_s, B_s, and C_s computed by FEM.