Semi-analytical quasi-normal mode theory for the local density of states in coupled photonic crystal cavity-waveguide structures

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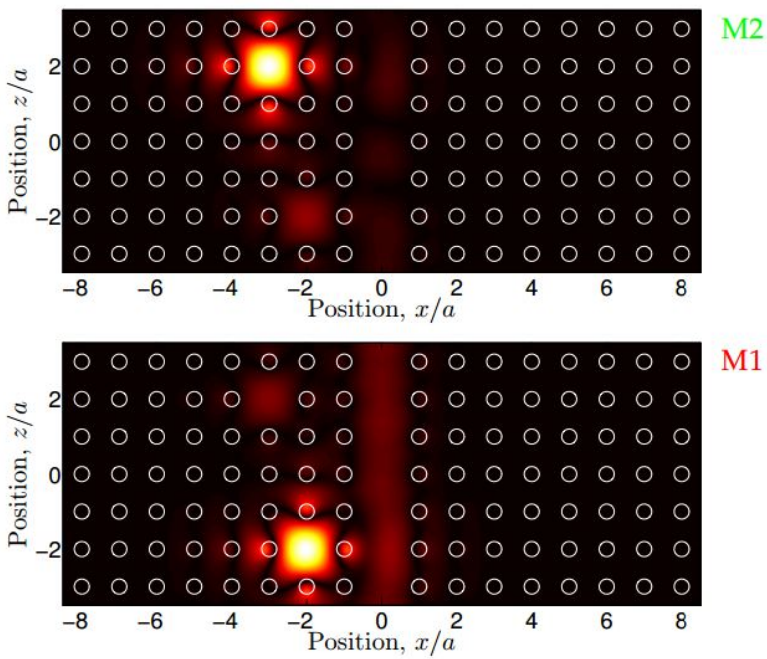

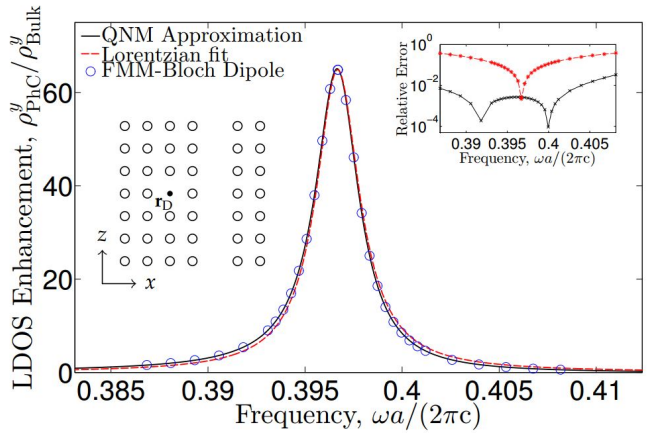

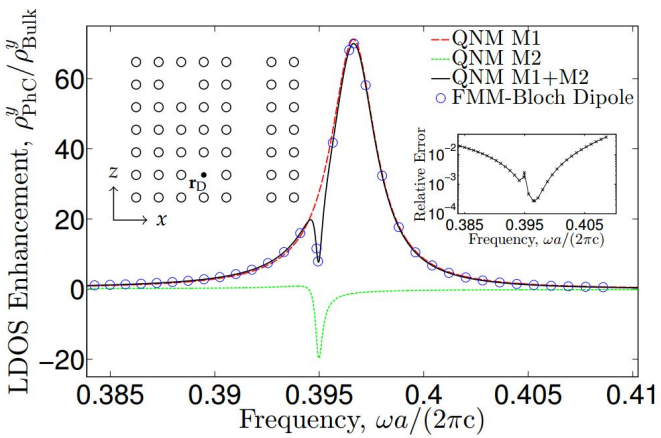

$$\rho^{\alpha}(\mathbf{r};\omega) = \frac{\omega}{\pi}\sum_{\mu}\mathrm{Im}\left[\mathbf{n}_{\alpha}\cdot\frac{\mathbf{E}_{\mu}(\mathbf{r})\otimes\mathbf{E}_{\mu}(\mathbf{r})}{\tilde{\omega}_{\mu}(\tilde{\omega}_{\mu}-\omega)}\cdot\mathbf{n}_{\alpha}\right]$$