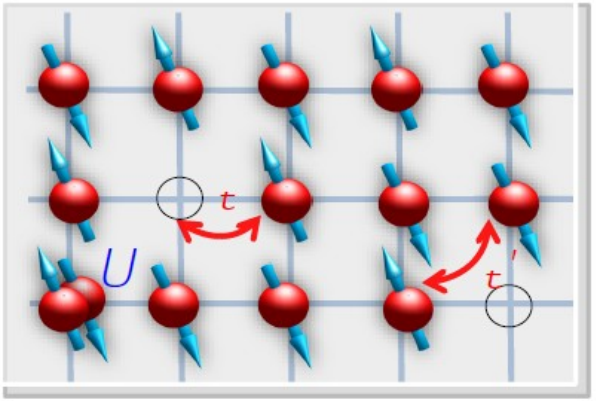
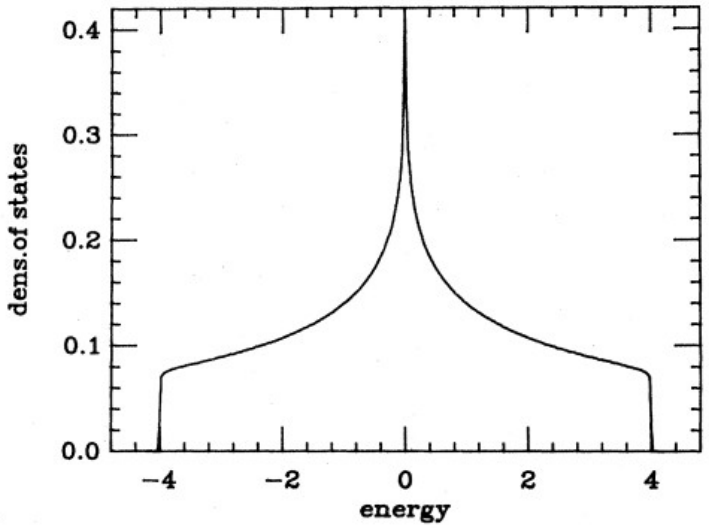
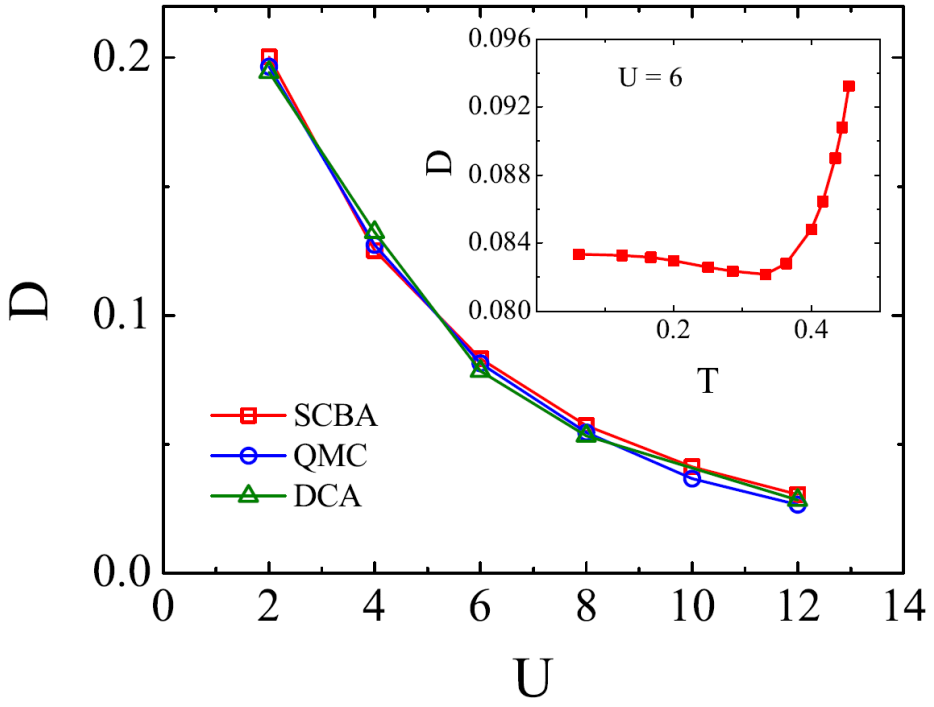
Square lattice Hubbard model

$$H = -t \sum_{\langle i,j \rangle,\sigma}^{N} (c^{\dagger}_{i,\sigma} c_{j,\sigma} + \text{h.c.}) + U \sum_{i=1}^{N} (n_{i,\uparrow} - \frac{1}{2})(n_{i,\downarrow} - \frac{1}{2})$$



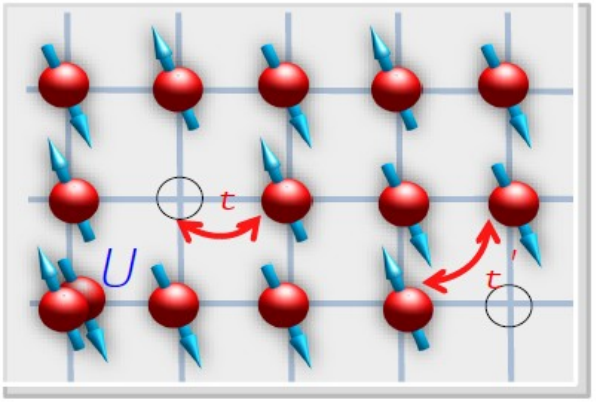


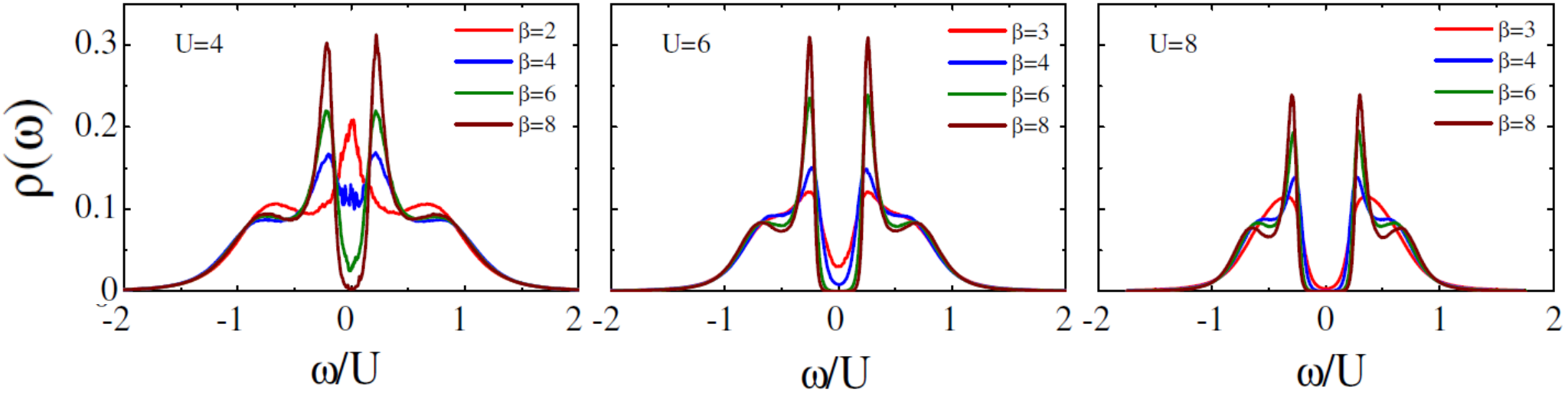


- C. Chen, Bachelor Thesis (2016)
- X.-J. Han et al., PRB 99, 245150 (2019)

Square lattice Hubbard model

$$H = -t \sum_{\langle i,j \rangle,\sigma}^{N} (c^{\dagger}_{i,\sigma} c_{j,\sigma} + \text{h.c.}) + U \sum_{i=1}^{N} (n_{i,\uparrow} - \frac{1}{2})(n_{i,\downarrow} - \frac{1}{2})$$





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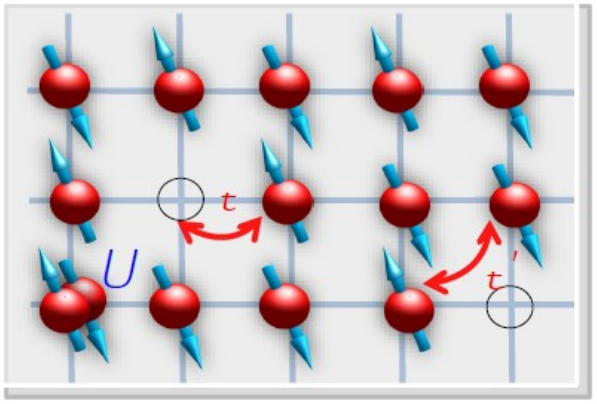
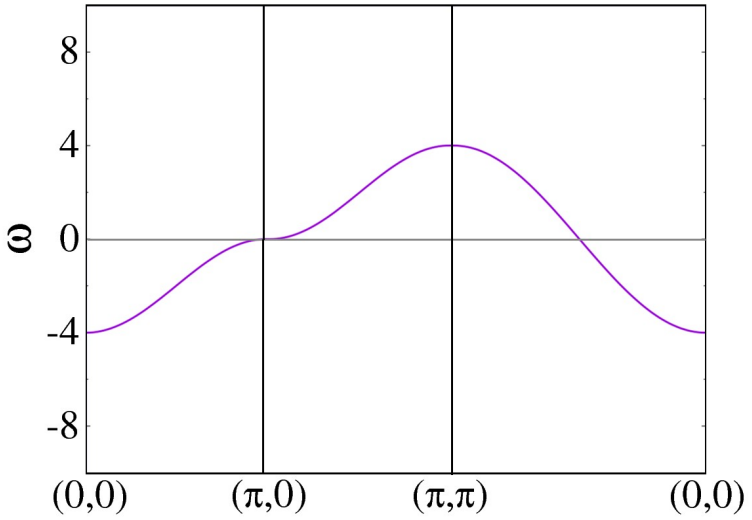
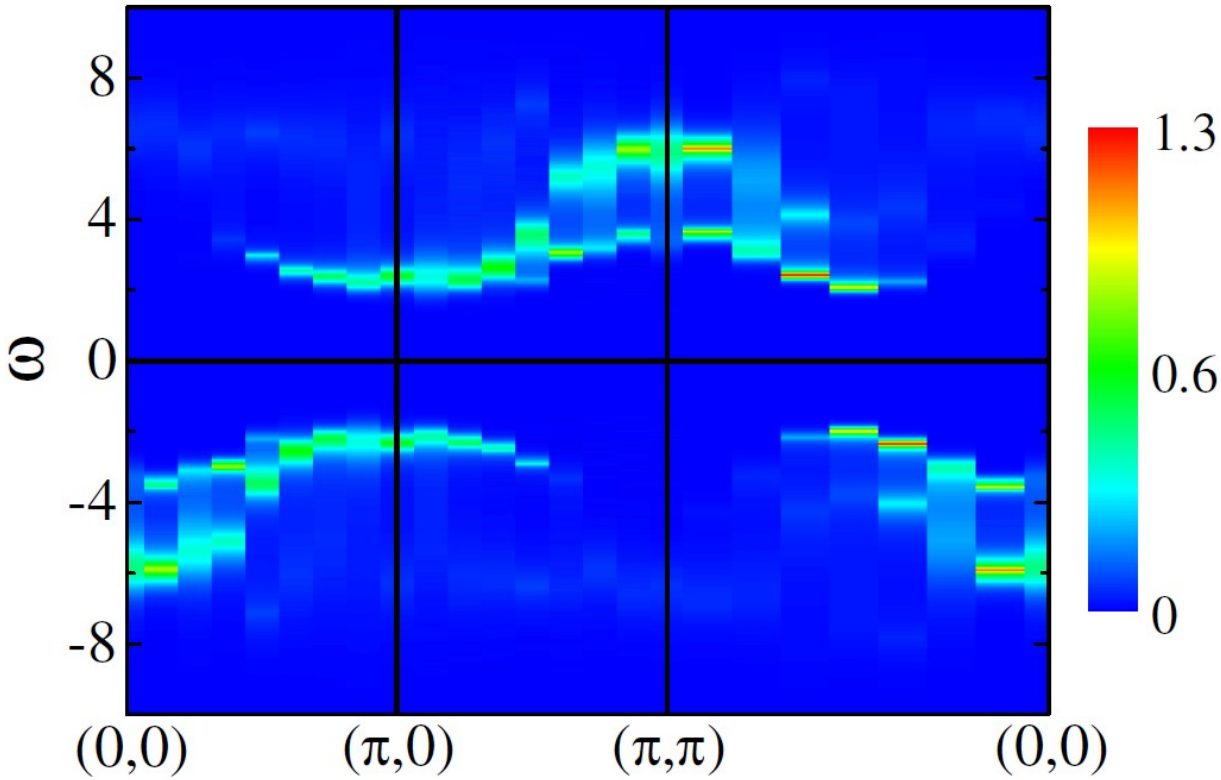
Square lattice Hubbard model







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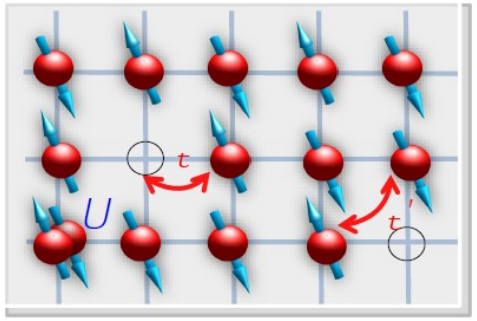
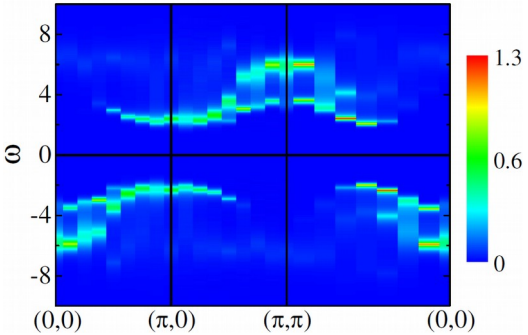
Square lattice Hubbard model





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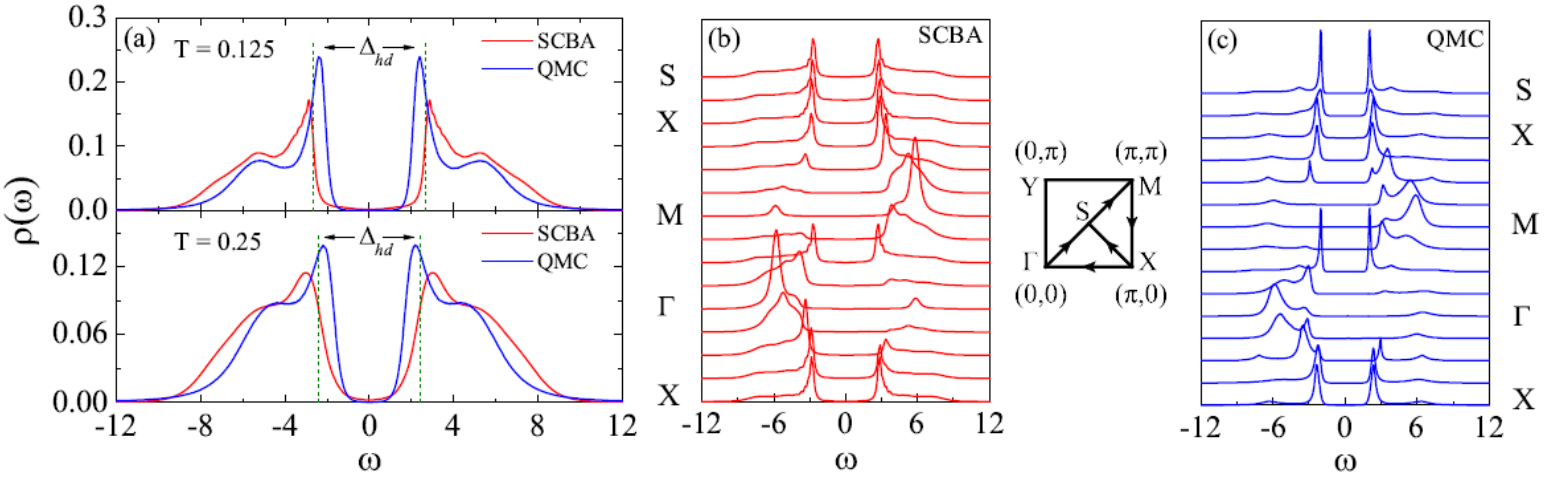
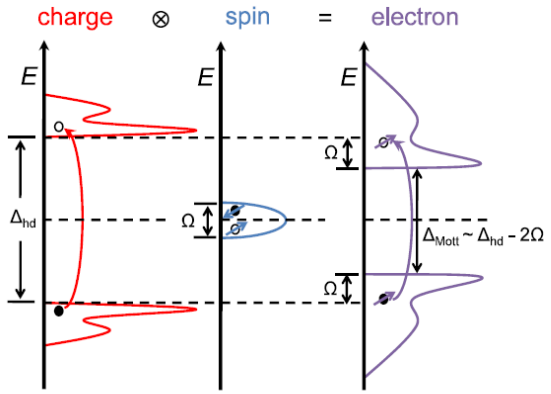
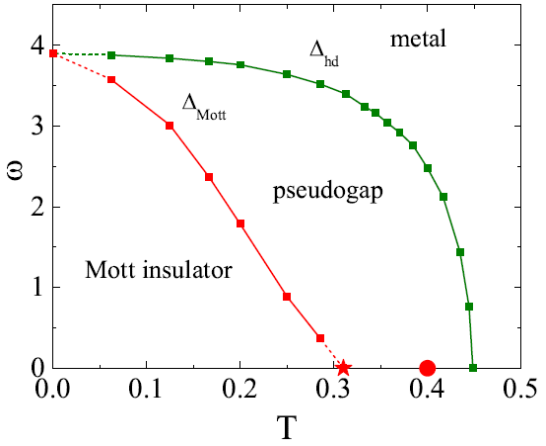
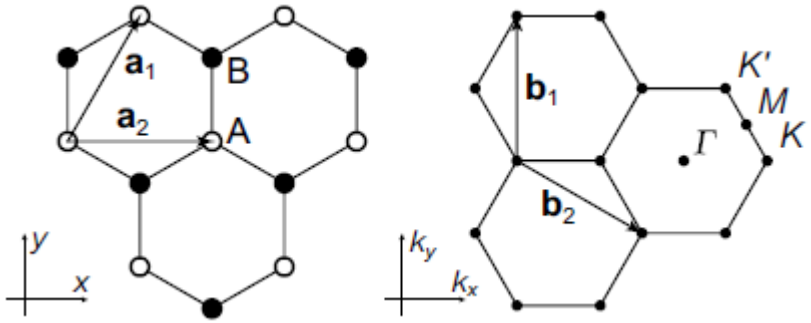


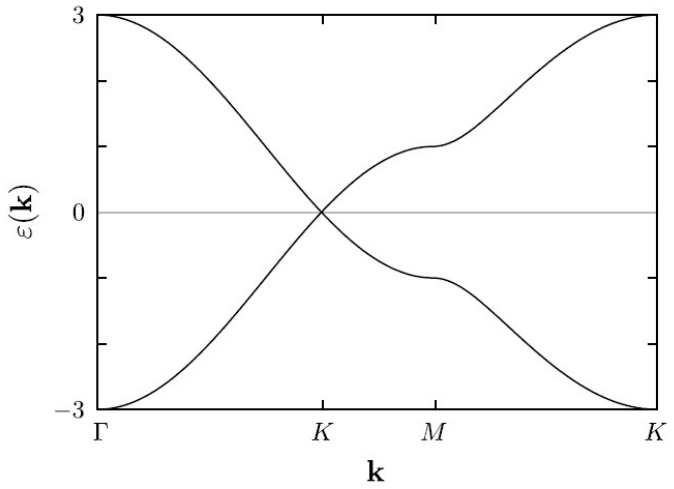


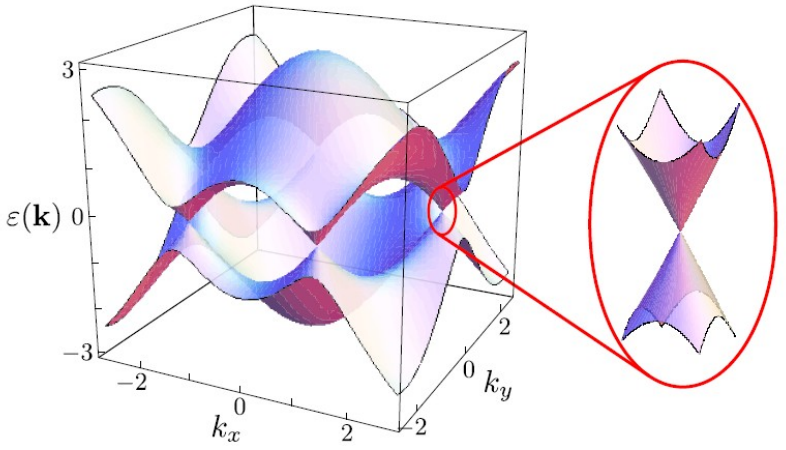


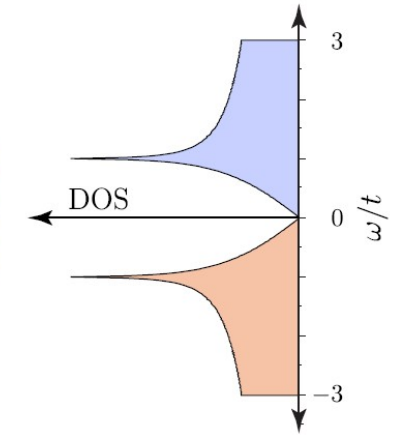
Honeycomb lattice Hubbard model

$$H = -t \sum_{\langle i,j\rangle,\sigma}^{N} (c^{\dagger}_{i,\sigma} c_{j,\sigma} + \text{h.c.}) + U \sum_{i=1}^{N} (n_{i,\uparrow} - \frac{1}{2})(n_{i,\downarrow} - \frac{1}{2})$$









- ZYM, Phd Thesis (2011)

Honeycomb lattice Hubbard model

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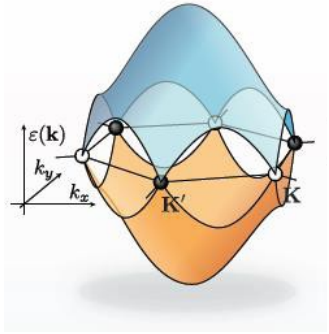
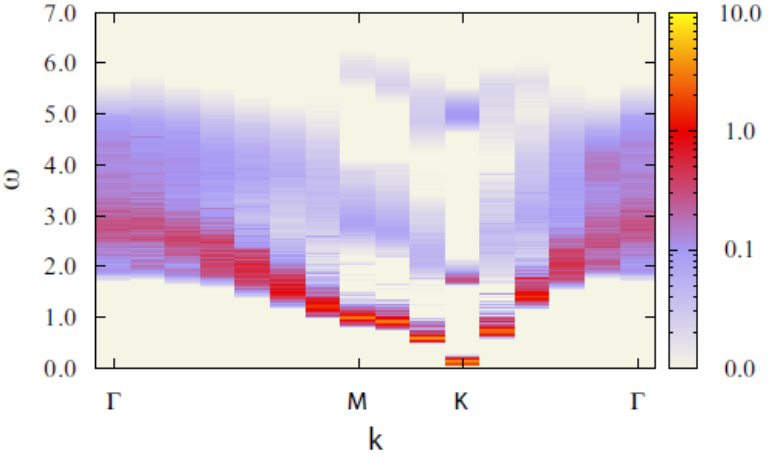
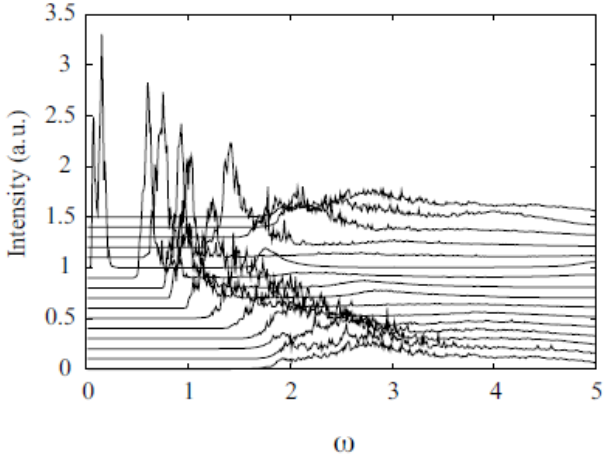
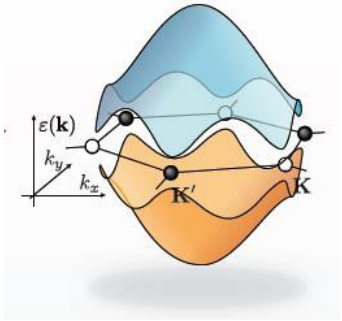
$A(\mathbf{k}, \omega)$



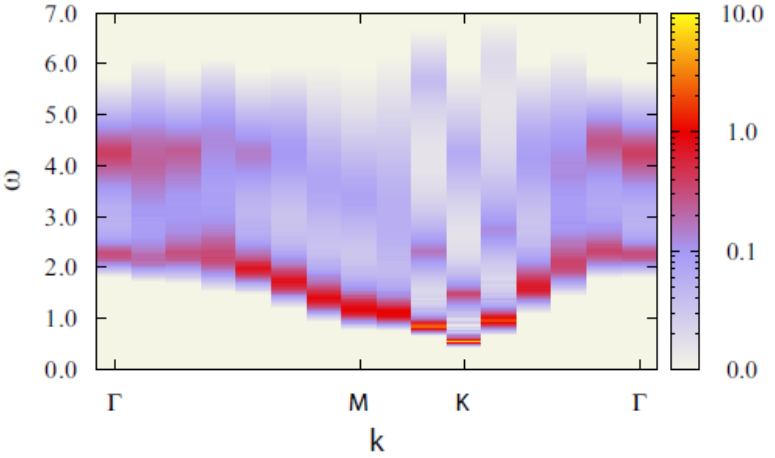
$U/t = 3.5$

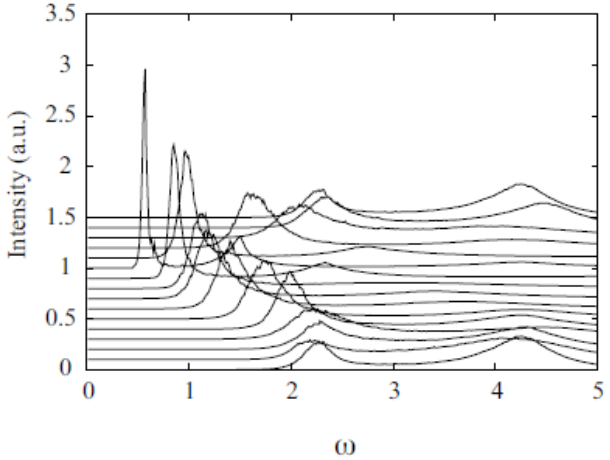






$U/t = 5.0$





- ZYM, Phd Thesis (2011)

Honeycomb lattice Hubbard model

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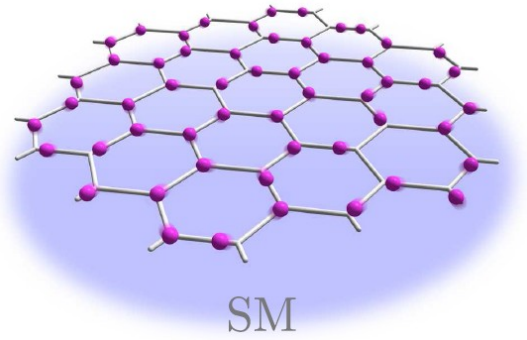
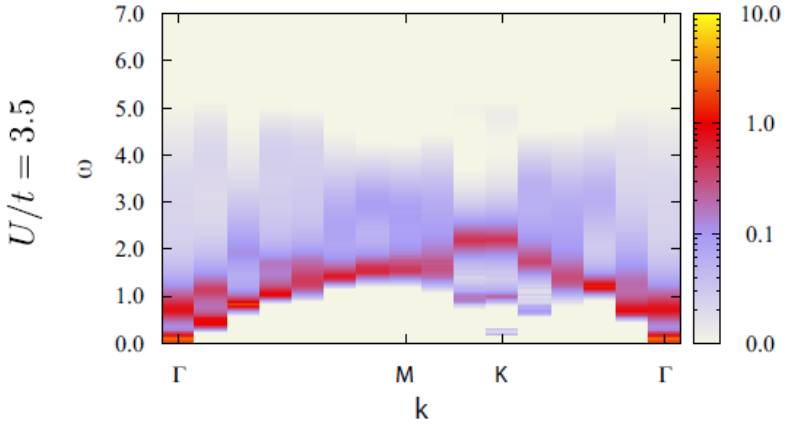
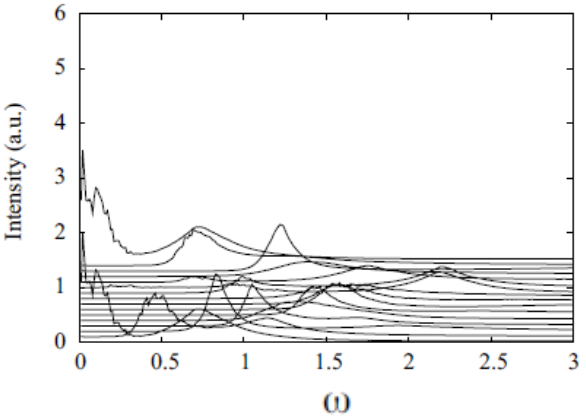
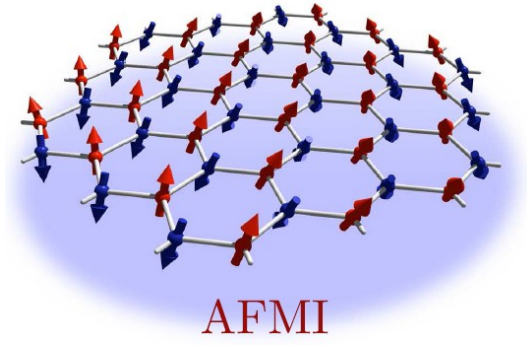
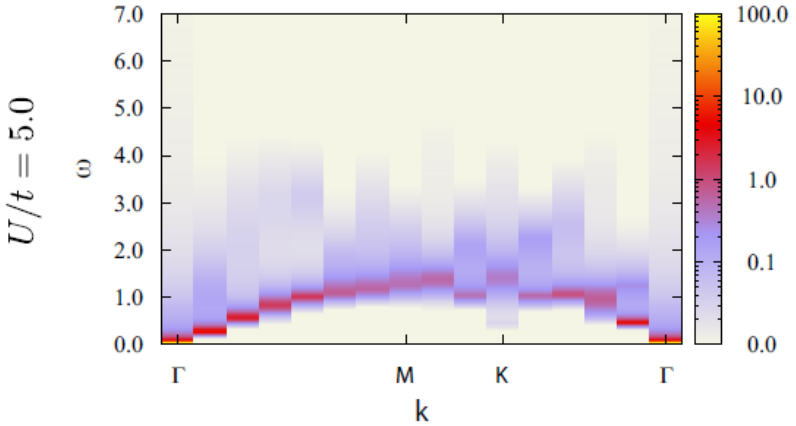


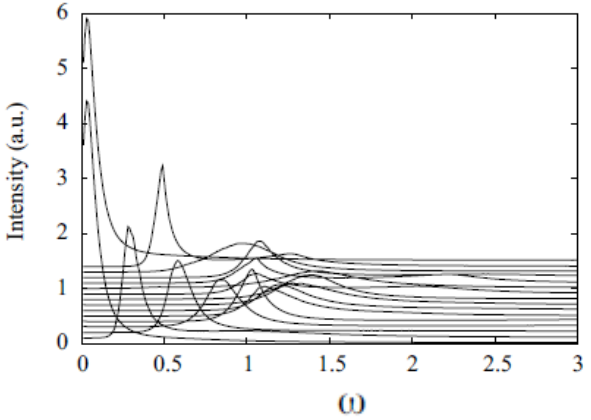
$\chi_s(\mathbf{k}, \omega)$











- ZYM, Phd Thesis (2011)