File tracker- Masters Project

Maria Ramírez Rodríguez

February-May 2025

1 Test models

1.1 1NN

FRG code (no symmetries applied) to a 1NN 2D hubbard model. Includes a brief analysis (k1k2) on the number of kn and knf points to use for each iteration.

1.1.1 Umu

U	$\frac{\mu}{U}$	nk	nkf
0-2 (steps of 0.5)	0.5-2 (steps of 0.5)	40	15

Table 1: Umu model

1.1.2 Umu2

U	μ	nk	nkf
0-8 (steps of 0.1)	0-1 (steps of 0.25 (exluding 0.75))	40	10

Table 2: Umu2 model

1.1.3 Umu3CDW

Exploring what appeared to be a CDW region, when in reality was a FL.

1.1.4 Umu4

U	μ	nk	nkf
0-8 (steps of 0.25)	0-1 (steps of 0.1)	40	10

Table 3: Umu4 model

1.1.5 Umu5

For comparison with 1.2.1 and 1.2.2

U	μ	nk	nkf
0-8 (steps of 0.25)	0-1 (steps of 0.1)	20	5

Table 4: Umu5 model

1.2 2NN

1.2.1 2NN-without editing

DISCARD. Note that this model shows the results for a 2NN TBM but without the appropriate .c file

U	μ	nk	nkf	computer
0-8 (steps of 0.25)	0-1 (steps of 0.1)	20	15	0

Table 5: Umu4 model

1.2.2 2NNa

Same model as 2NN, only subtetly is that the C file has been edited accordingly to match the two atoms per unit cell. (paws1)

U	μ	nk	nkf
0-8 (steps of 0.25)	0-1 (steps of 0.1)	20	5

Table 6: Umu4 model

1.2.3 2NNb

Same model as 2NNb, only subtetly is that the C file has been edited accordingly to ensure that the positions of the two atoms lie within one unit cell.

U	μ	nk	nkf
0-8 (steps of 0.25)	0-1 (steps of 0.1)	20	5

Table 7: Umu4 model