FYSC23

Local Density of States, Surfaces, and Adsorbates

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February 12, 2025

1 LDOS 1D

1.1 First problem

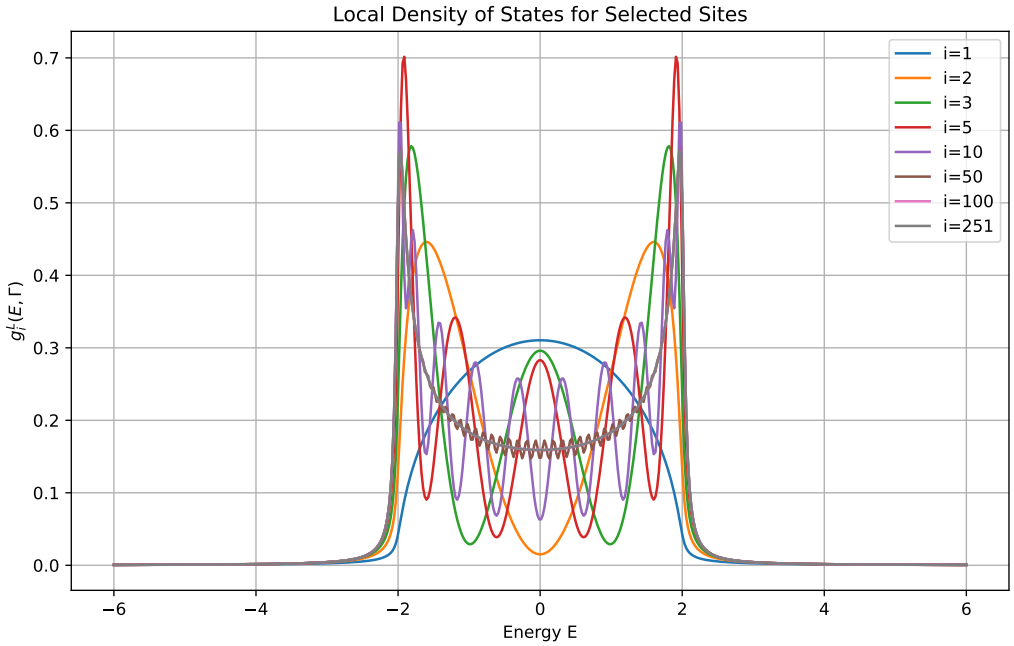

Figure 1: Local density of states plotted for a 1D chain of length $N = 501$. The index i corresponds to the site number in the chain.

Noticeable in Fig. 1 is that the LDOS is symmetric around the central energy. For increasing i the number of nodes in the LDOS oscillation increases. The central amplitude also decreases while the amplitude at $E = \pm 2$ increases.

1.2 Second problem

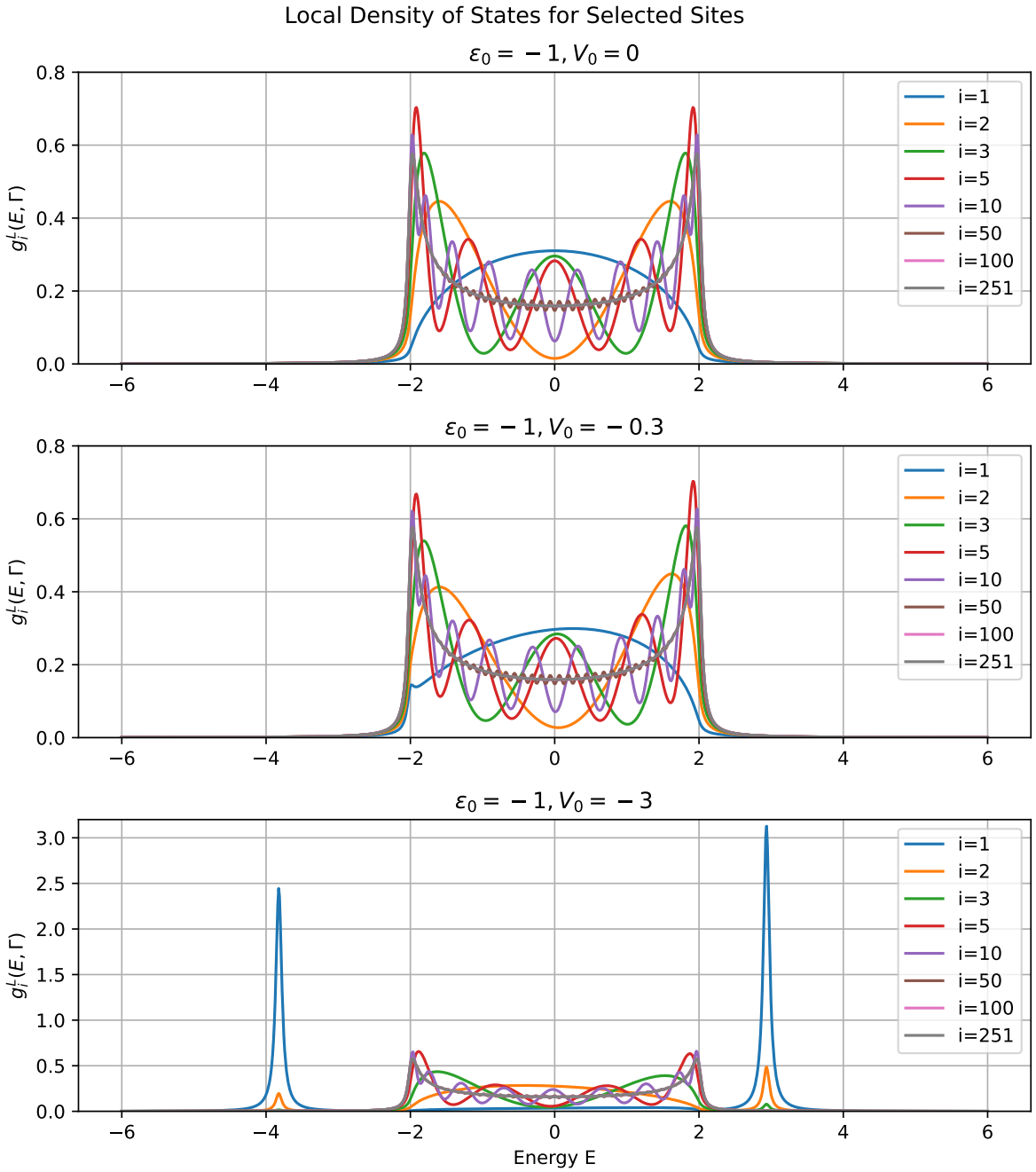

Figure 2: This figure...

2 LDOS 2D

2.1 Third problem

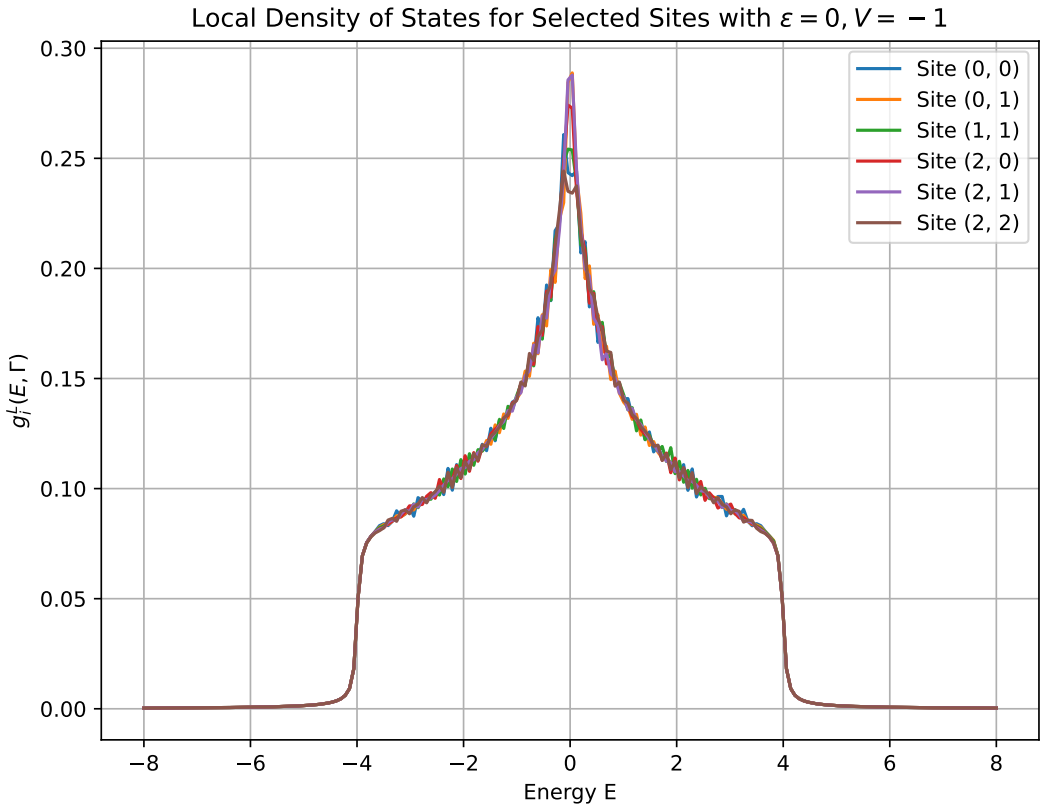

Figure 3: This figure...

2.2 Fourth problem

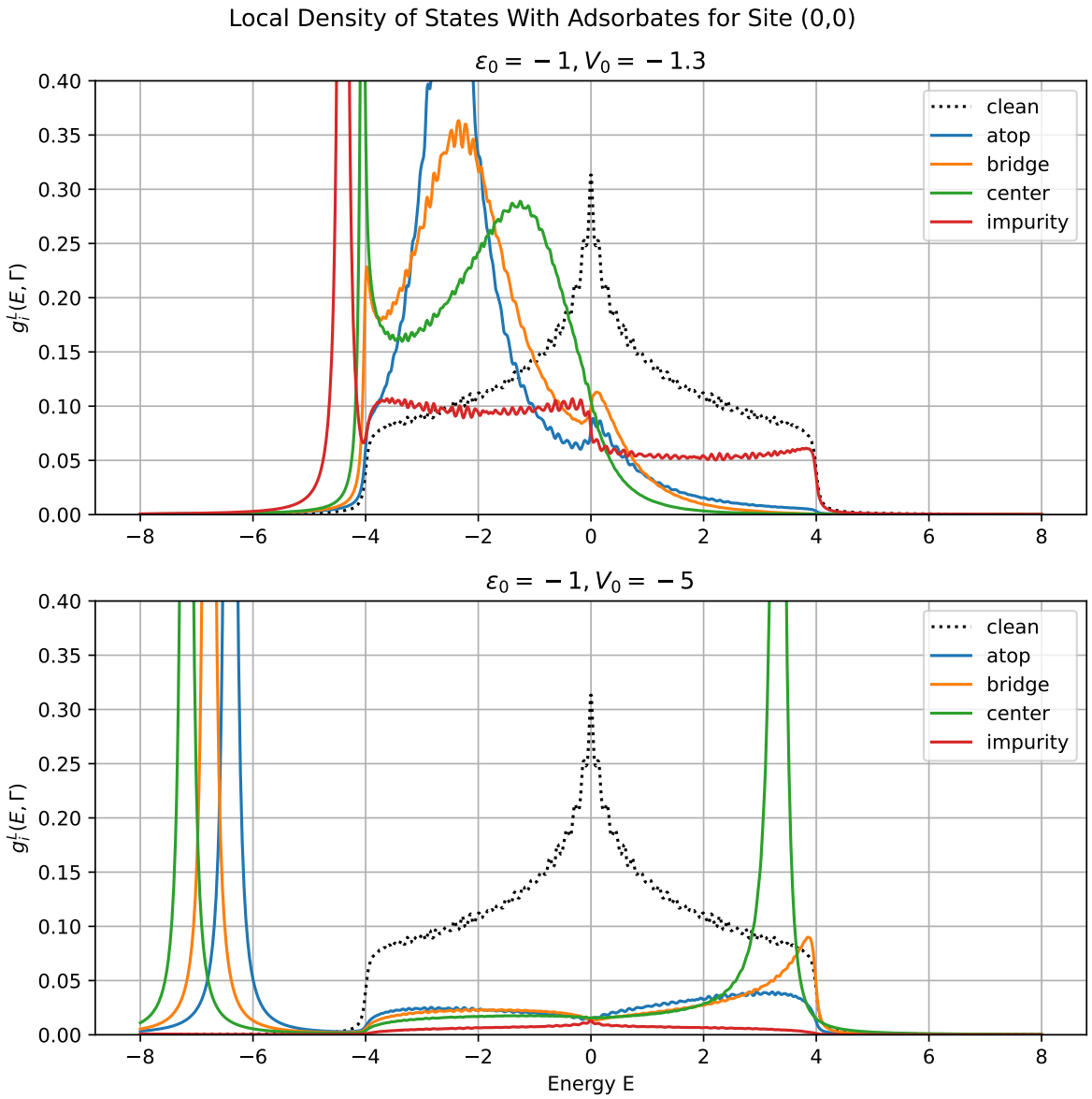

Figure 4: This figure...

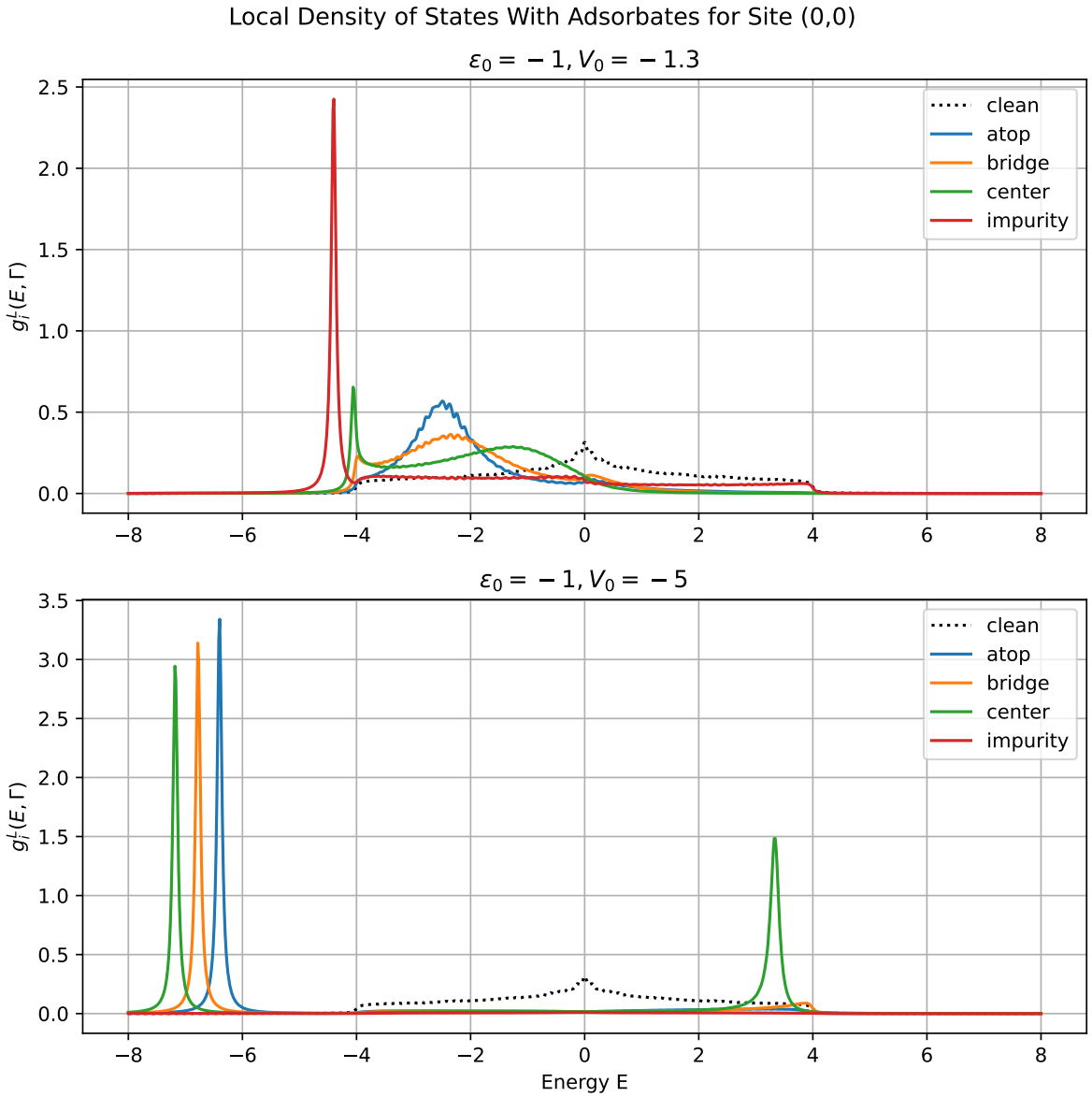

Figure 5: This figure...