

FYSC23

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# Local Density of States, Surfaces, and Adsorbates

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# 1 LDOS 1D

## 1.1 First problem

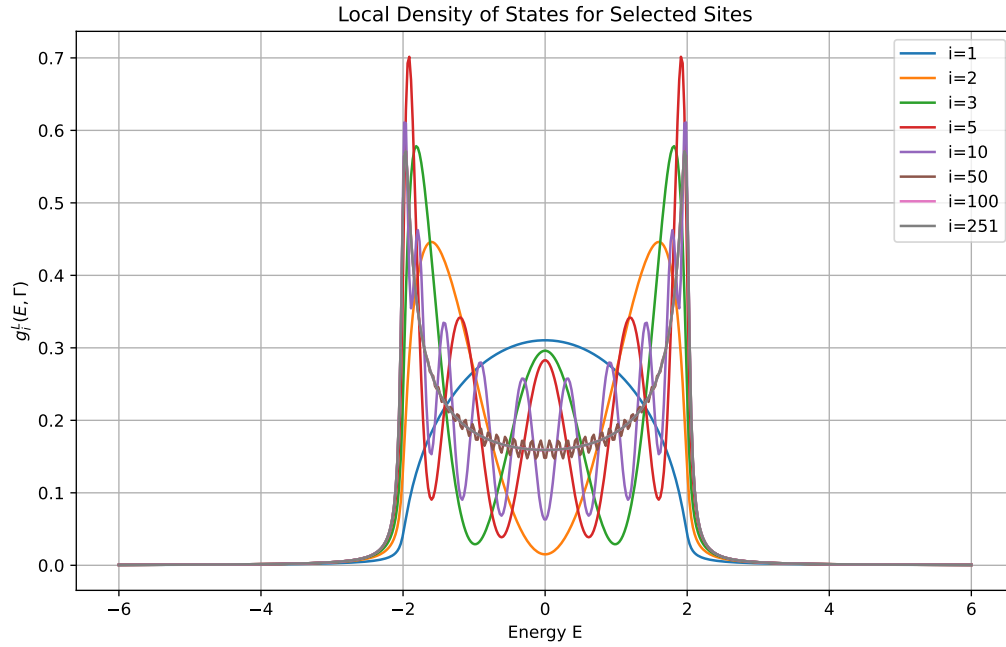


Figure 1: Local density of states plotted for a 1D chain of length  $N = 501$ . The index  $i$  corresponds to the site number in the chain.

**A1** 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

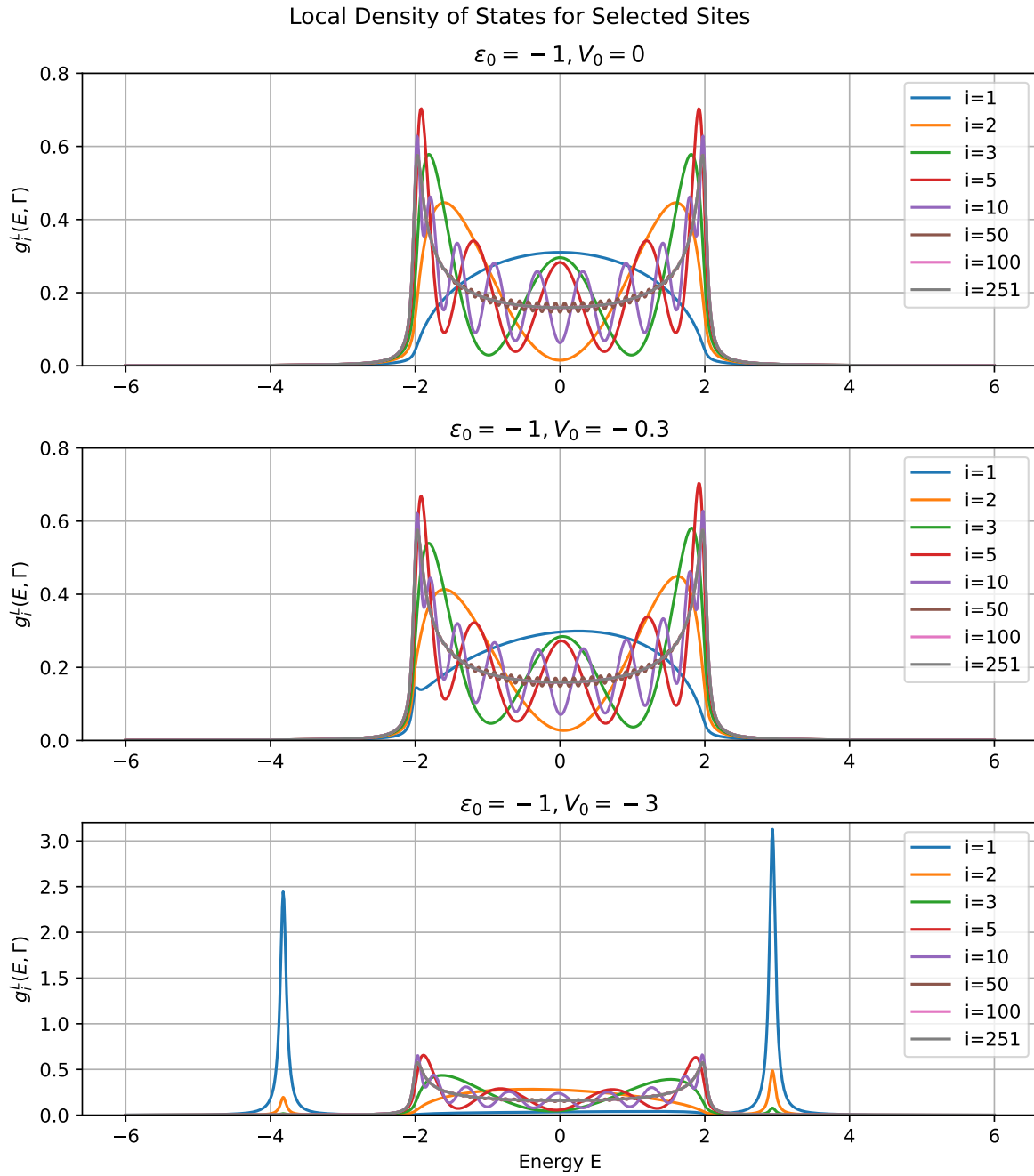


Figure 2: This figure...

## 2 LDOS 2D

### 2.1 Third problem

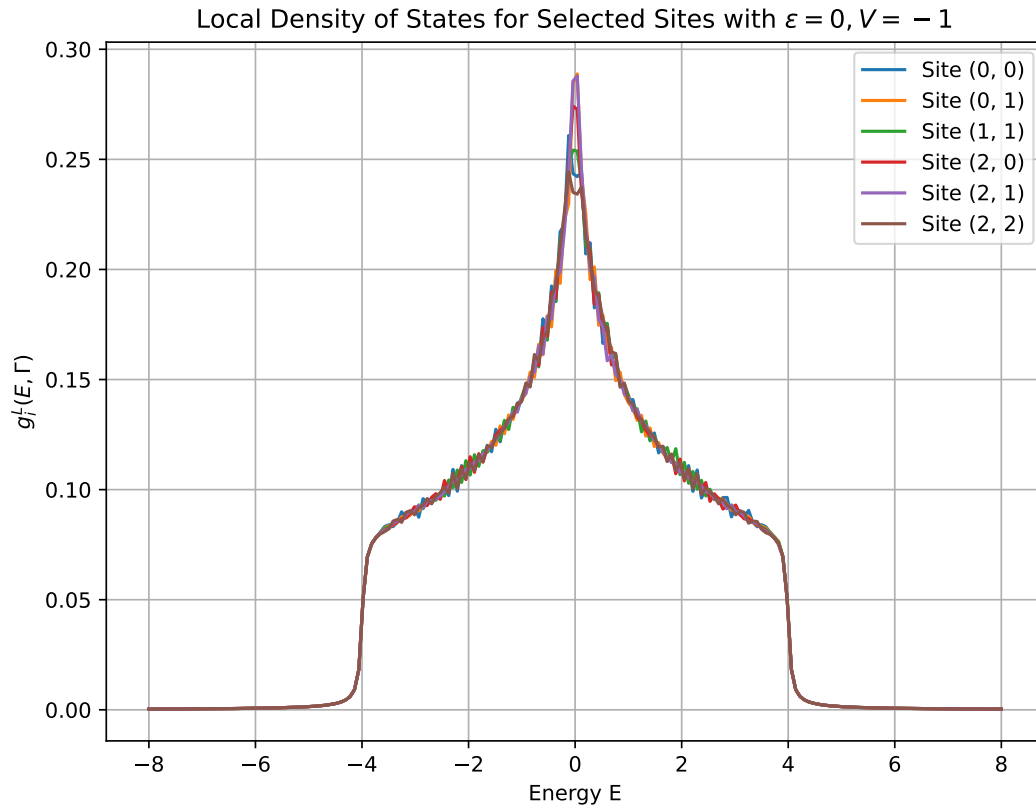


Figure 3: This figure...

## 2.2 Fourth problem

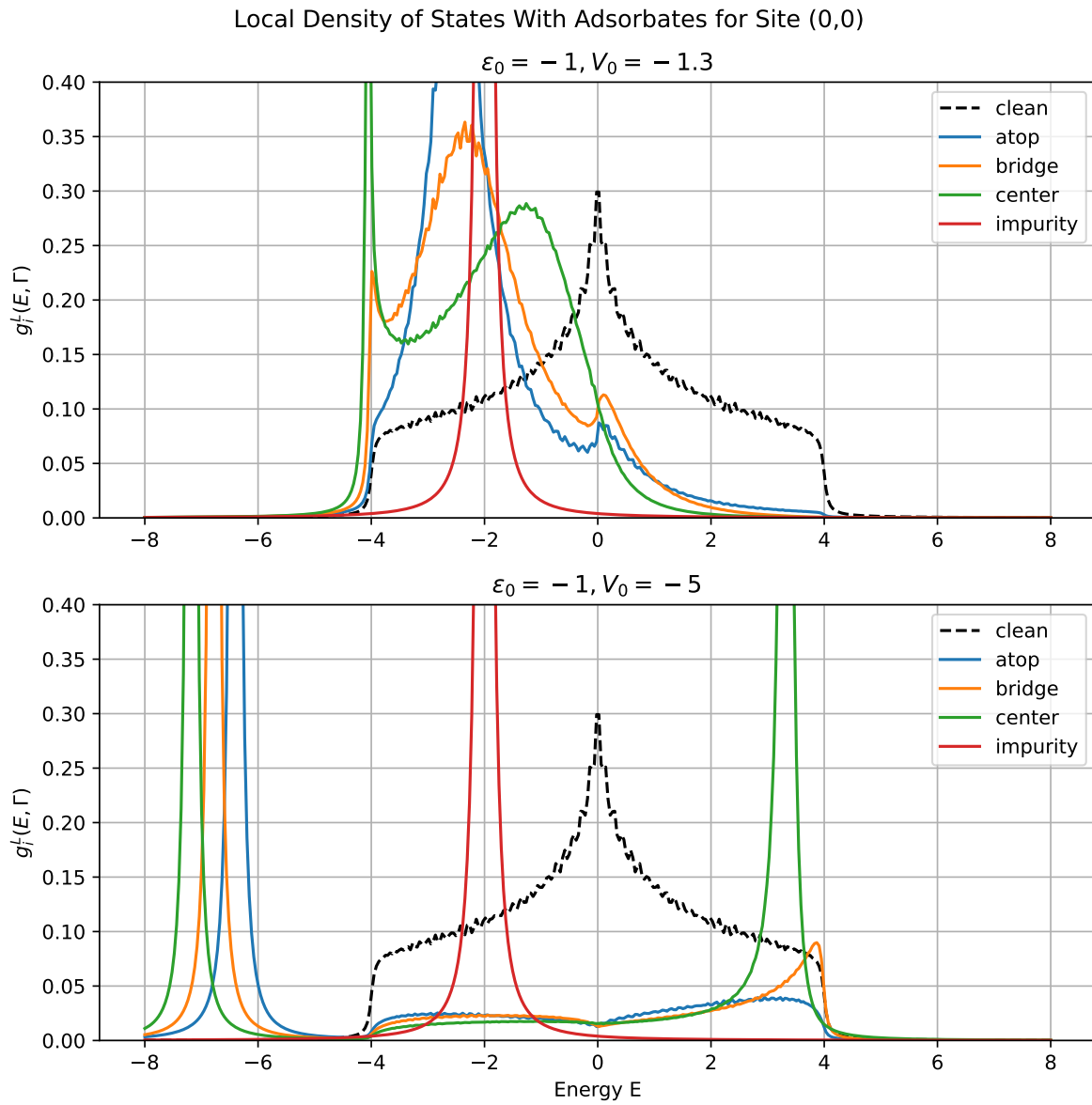


Figure 4: This figure...

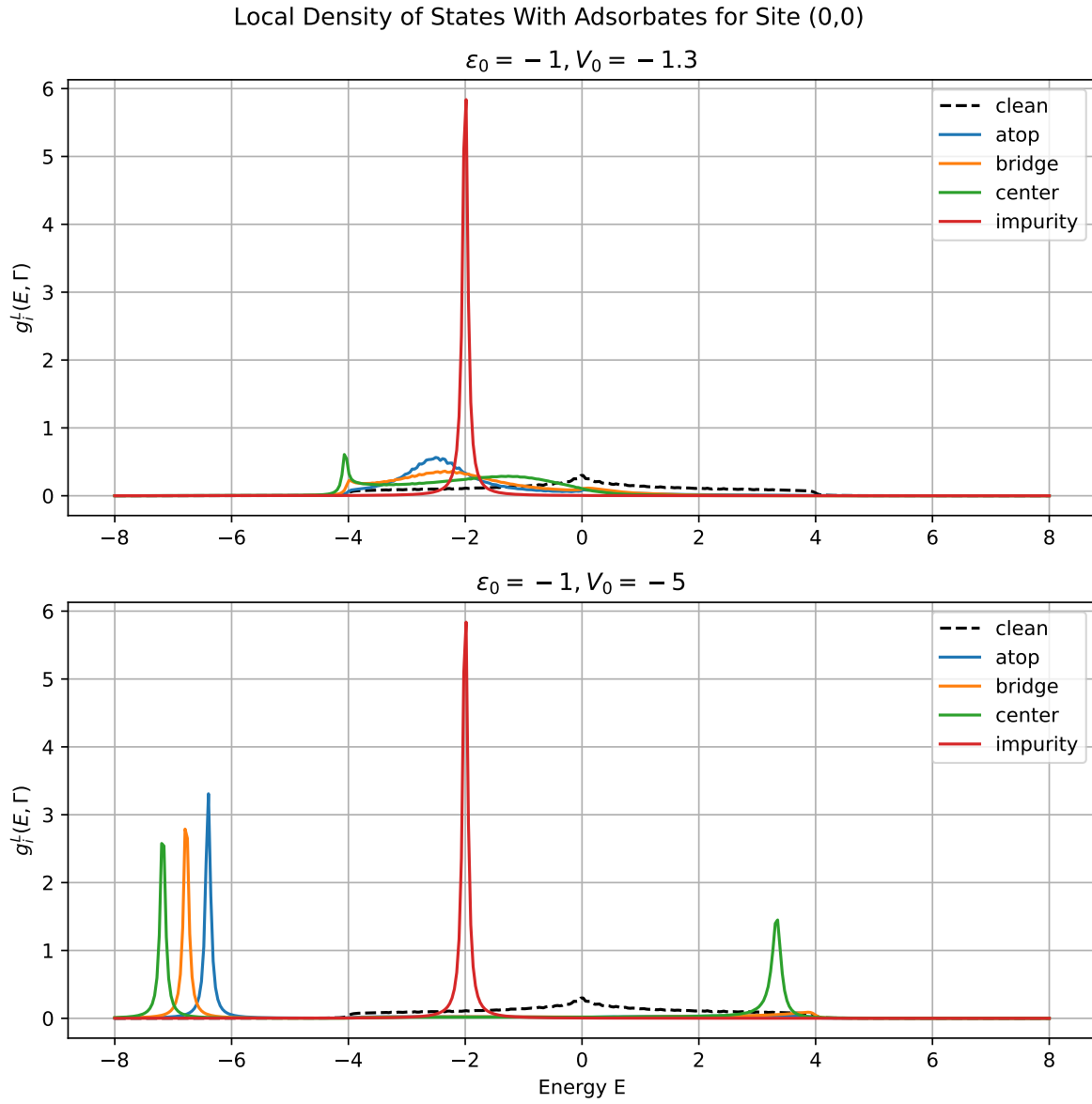


Figure 5: This figure...