

## On the electronic structure of silicene on Ag(111): strong hybridization effects

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The electronic structure of the recently synthesised (3×3) reconstructed silicene on (4×4) Ag(111) is investigated by first-principles calculations. New states emerge due to the strong hybridization between silicene and Ag. Analyzing the nature and composition of these hybridized states, we show that i) it is possible to clearly distinguish them from states coming from the Dirac cone of free-standing silicene or from the sp-bands of bulk Ag and ii) assign their contribution to the description of the linearly dispersing band observed in photoemission. Furthermore, we show that silicene atoms contribute to the Fermi level, which leads to similar STM patterns as observed below or above the Fermi level. Our findings are crucial for the proper interpretation of experimental observations.