Supplementary information

SI 1: Rectilinear 1D moiré mathematical model

In the case of rectilinear base and revealing layers, the geometric transformation predicting the layout of the 1D moiré image for given layouts of the base and revealing layers is a linear mapping, Eq. (2)\textsuperscript{12}. It specifies the transformation of each point \((x', y')\) of the base layer into the corresponding point \((x, y)\) of the moiré image layer, as a function of the geometric layouts of the base layer given by the base band repetition vector \((t_x, t_y)\), and of the revealing layer, given by the revealing line grating period \(T_r\) (Fig. 1(b)).

\[
x = x' + \frac{t_x}{T_r - t_y} \cdot y' \\
y = \frac{T_r}{T_r - t_y} \cdot y'
\]  \(2\)

On the other hand, the inverse mapping, which is also a linear transformation, allows the calculation of the layout of the base layer image as a function of the layout of the desired moiré image and of the selected revealing layer parameters. When inserting the height \(t_y\) of the base band as \(y'\) ordinate into Eq. (2), the height \(H\) of the corresponding moiré is obtained (Eq. (1))