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【101】 Modified copper charge density wave (Cu-CDW) order in $\text{YBa}_2\text{Cu}_3\text{O}_7/\text{Nd}_{1-x}(\text{Ca}_{1-y}\text{Sr}_y)_x\text{MnO}_3$ heterostructures

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Using RIXS and REXS, we measured the systematic modification of Cu-charge density wave in optimally doped $\text{YBa}_2\text{Cu}_3\text{O}_7$, under the interfacial proximity of $\text{Nd}_{1-x}(\text{Ca}_{1-y}\text{Sr}_y)_x\text{MnO}_3$ as function of the hole doping and tolerance factor of the manganite layers.

For $x=0.35$, we observe the Cu-CDW order with the usual $d_{x^2-y^2}$ orbital character at $Q||=0.3$ r.l.u, which gets strongly enhanced as the tolerance factor of the manganite layers is decreased or when a strong magnetic field is applied.

For $x=0.5$ and $y=0.25$, we observe a completely new kind of Cu-order which has a small wave vector of $Q||=0.1$ r.l.u., a much larger correlation length of about 40nm and a completely different d_{z^2} orbital character.

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