Effects of Epitaxial Strain and Oxygen Underdoping on Superconductivity in Manganite/Cuprate Thin-Film Heterostructures

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H. Zhang *et al.*, arXiv:1710.10668 (2017)

Spin-triplet F/S Proximity Effect in LCMO/YBCO multilayers?

Visani *et al.*, Nat. Phys. **8** 539 (2012)
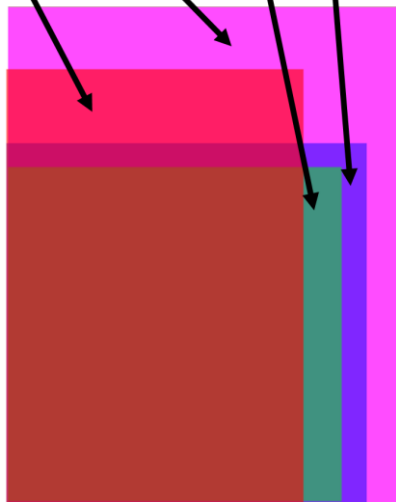Bergeret *et al.*, PRL **110** 117003 (2013)

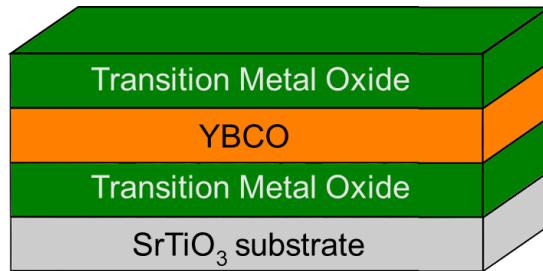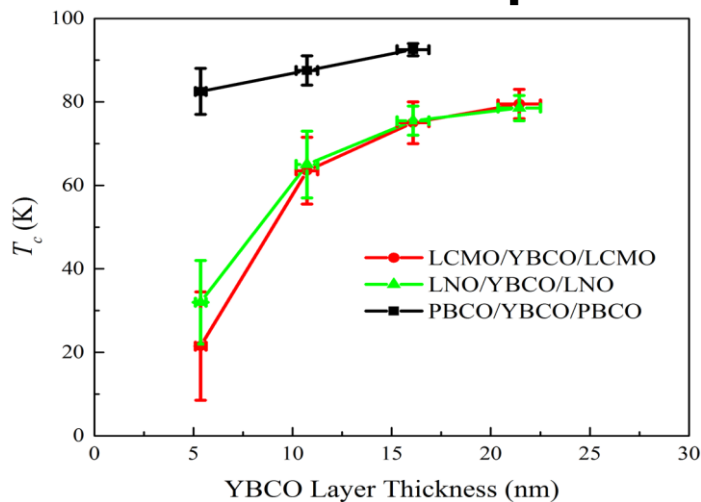### Odd-frequency pairing?

Momentum x Spin x Frequency
$$k \otimes \sigma \otimes \omega = \text{odd}$$
$$\mathcal{F}_{\alpha\beta}(r_1 t_1, r_2 t_2) = -\mathcal{F}_{\alpha\beta}(r_1 t_2, r_2 t_1)$$

YBCO   PBCO   LNO   LCMO

Resistance vs. Temperature

- LCMO/YBCO/LCMO
- LNO/YBCO/LNO
- PBCO/YBCO/PBCO

T_c (K) vs. YBCO Layer Thickness (nm)

Transition Metal Oxide
YBCO
Transition Metal Oxide
SrTiO$_3$ substrate

RXS at Cu-L_3 edge

20 K
220 K
300 K

Intensity

H (r.l.u)