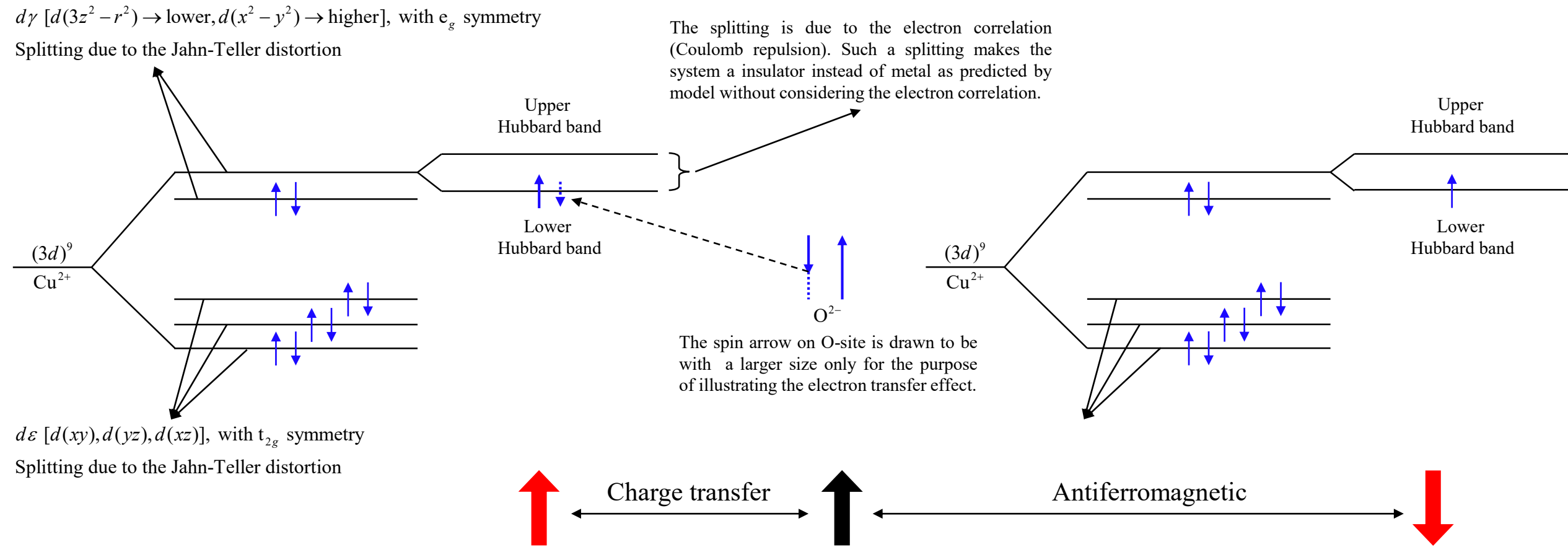
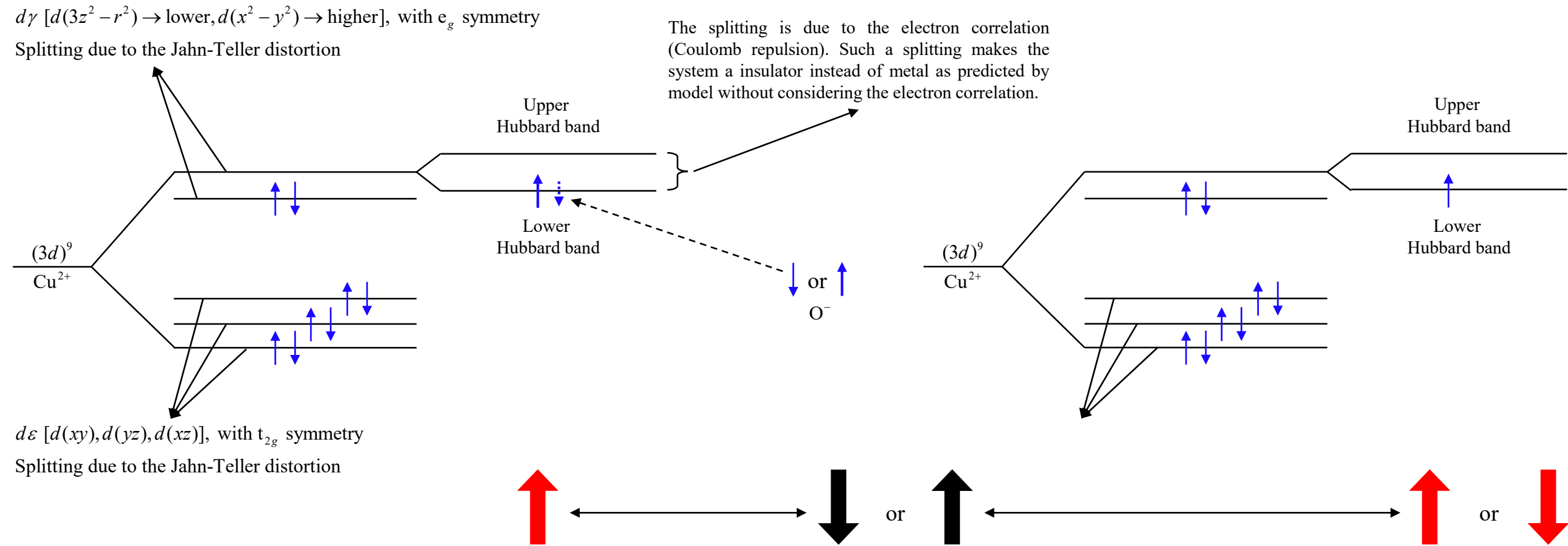


La_2CuO_4 No doping \Rightarrow Mott insulator with AFM ordering



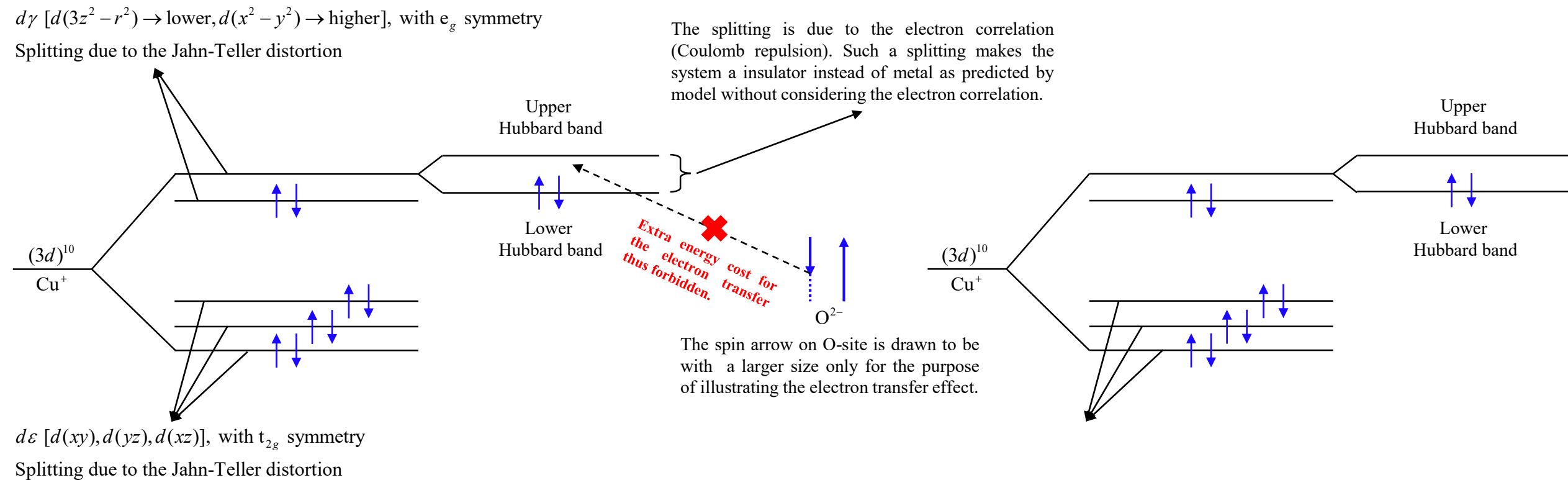
La₂CuO₄ Hole doping => Mott insulator without magnetic ordering



Or, if we can start from the undoped situation, where the AFM order is established. As the increasing of the hole doping, the pure electron spin on O site in the middle causes frustration in between the magnetic moment of the two Cu sites.

Frustration of spin alignment thus no magnetic order.

La_2CuO_4 Electron doping \Rightarrow Mott insulator without magnetic ordering



No magnetic order established.

Refer to the following link for the lecture note by M. Suzuki:

<https://1drv.ms/b/s!AlZpbyasn9jtkNBgthBr0cM2MIWjvg>