

Abstract Submitted  
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**Quantum phase diagram of Polar Molecules in 1D Double Wire Systems** CHI-MING CHANG, DAW-WEI WANG, NationalTsing Hua University  
— We study the quantum phase transitions of fermionic polar molecules loaded in a double wire potential. By tuning the magnitude and direction of external electric field we observed many interesting quantum phases in different parameter range, including an easy-plane spin density wave, a triplet superconducting phase, and a truly long range order of easy-axis ferromagnetic phase in strong interacting regime. We also discuss how these exotic quantum phases can be measured in the existing experimental techniques.

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