

# ***Experimental studies of 5d systems***

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For the last fifty years the Mott-Hubbard model has served as the enduring paradigm for describing strongly-correlated electron systems, forming the basis for our understanding of high-temperature superconductors, low-dimensional quantum magnets, atomic gasses, etc.

The metal-insulator transition (MIT) it displays - driven as it is by purely electronic correlations - is one of its defining features. New classes of materials have been recently discovered that potentially fall outside of the Mott-Hubbard paradigm, offering challenges and opportunities to both experimentalists and theorists alike. These are materials characterized by strong spin-orbit interaction and extended orbitals, such as are found in 4d and 5d transition metal oxides (TMO). In this talk I will present the results of experiments on several 5d TMO which establish novel classes of correlated systems displaying metal-insulator transitions (MIT) and unusual magnetic order and excitations.