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Kondo screening and Magnetism at Interfaces AXEL EUVERTE, GEORGE BATROUNI, Institut Non-Linéaire de Nice, SIMONE CHIESA, College William & Mary, RICHARD SCALETTAR, Physics Department, UC Davis — As clean heterostructures synthesis and analysis become experimentally accessible, the question of the nature of magnetic and transport properties at correlated interfaces arise. We study a simple Hubbard model of an interface between a metal and an antiferromagnetic insulator using a finite temperature quantum Monte Carlo method. Focusing on the effect of the hybridization at the interface, we show the singlet formation leads in thin systems to an intermediate non-magnetic insulating phase that involves metallic and correlated layers that are not in direct contact with each other. In thicker heterostructures, magnetic proximity effect of correlated layers farther from the interface defeats the formation of that intermediate phase. The large hybridization case is also discussed, showing decoupling of outer layers from the singlet interface.

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