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**Surface effects in doping a Mott insulator** REZA NOURAFKAN, FRANK MARSIGLIO, Department of Physics, University of Alberta, Edmonton, Alberta, Canada T6G 2G7 — The physics of doping a Mott insulator is investigated in the presence of a solid-vacuum interface. Using the embedding approach for dynamical mean field theory we show that approaching a Mott insulating phase from the metallic side, a dead layer forms at the surface of the solid, where quasiparticle amplitudes are exponentially suppressed. In particular, we have demonstrated that the reduction of the quasiparticle weight detected by surface sensitive photoemission experiments of a doped Mott insulator are caused by both charge transfer and enhanced correlation effects at the surface. The expected modification of the intra-layer hopping at the surface and inter-layer hopping between the surface and the subsurface layer amplifies the surface effects.

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