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**Density Functional Theory for Excited States** ANTONIOS GONIS, LLNL, DON M. NICHOLSON, X.-G. ZHANG, G. MALCOLM STOCKS, ORNL, SIMONE CHIESA, UC Davis — Using the concept of entangled states it is shown that density functional theory in its initial ground-state formulation<sup>1,2,3</sup> is inherently capable of treating the excited states of interacting many-particle systems.<sup>4</sup>

<sup>1</sup>P. Hohenberg and W. Kohn, Phys. Rev. **136**, B864, (1964).

<sup>2</sup>W. Kohn and L. J. Sham, Phys. Rev. **140**, A1133 (1965).

<sup>3</sup>M. Levy, Proc. Nat. Acad. Sci. USA **76**, 6062 (1979).

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