MAR17-2016-020057

Abstract for an Invited Paper for the MAR17 Meeting of the American Physical Society

Density Functional Theory: A great physics success story KIERON BURKE, Departments of Physics and of Chemistry, UC Irvine

Last year, more than 30,000 scientific papers were published that used Kohn-Sham DFT. The material with the currently highest ever measured superconducting transition temperate (203K) was predicted from such calculations. I will discuss this wonderfully interdisciplinary field in general, the importance of non-empirical approaches to approximating the exchange-correlation functional in particular, and what the future of the field might bring. As a former student of Walter Kohn, I will include my sense of his approach to theoretical physics.