A Possible solution to the high Tc Problem

ABSTRACT

The intense effort on the solution of the high Tc problem (over $10^5$ papers in 18 years) has led to remarkable new ideas which will affect future developments not just in condensed matter physics but all of physics. There may now exist a consistent microscopic theory which explains the universal features of the phase diagram of the Cuprates and whose principal predictions have been experimentally verified. This theory draws on an assimilation of the wide ranging experiments on the Cuprates to formulate a phenomenology to aid the formulation of a microscopic theory which in turn draws on aspects ranging from solid state chemistry and many body physics to field theory.