

Eliashberg theory of superconductivity: do we have it right?

Frank Marsiglio
Dept. of Physics, University of Alberta
fm3@ualberta.ca

Superconductivity is more than 100 years old; however, the established theory of conventional superconductors is barely more than half as old. But how established is it, and how conventional are the 'old' superconductors? This talk will discuss some of the successes of this established framework, generally known as BCS-Eliashberg theory, and how some of these ideas fit in with more modern, high-T_c superconductors. But I will also highlight some of the uncertain aspects of the conventional theory, and our recent attempts to shed more light on this uncertainty