Critical valence fluctuations and unconventional superconductivity

Kazumasa Miyake

Division of Materials Physics, Department of Materials Engineering Science, Osaka University, Toyonaka, Osaka 560-8531, Japan

I present a new idea of critical-valence-fluctuation (CVF) mechanism for CeCu$_2$(Ge,Si)$_2$. In particular, it is argued that the CVF mechanism is not specific to Ce112 compounds but can also apply to Ce115 compounds, such as CeCoIn$_5$, CeRhIn$_5$, and CeIrIn$_5$. These discussions might suggest that the CVF mechanism offers us a new paradigm for unconventional superconductivity other than the spin fluctuation mechanism.


Sorting category: Bb Superconductivity

Keywords: critical valence fluctuations, unconventional superconductivity, CeCu$_2$(Ge,Si)$_2$, Ce115

INVITED PAPER

LT2275