Abstract Submitted
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Dipolon Theory of High Temperature Superconductors– Prediction of the Existence of New Very Low Energy Excitations to be Observed in Photoemission Experiments RAM R SHARMA, University of Illinois at Chicago — The dipolon theory [1,2] first discovered [3,4] two high energy kinks in electron energy [5]. It [1-2] has also predicted two superconducting states, symmetric ("s") and anti-symmetric ("as"). Here we report the prediction of very low energy excitations due to transition from "as" state to "s" state ("ass") (or vice versa) which creates (annihilates) the quantum ("asson") of energy $\hbar\omega_a(\vec{q}_a) = E^s(\vec{k'}) - E^{as}(\vec{k"})$; "a" is for "asson" and $E^s(\vec{k'})$ and $E^{as}(\vec{k"})$ are electron energies in "s" and "as" states, respectively ($E^i(\vec{k}) = \bar{E}^i_r(\vec{k})$ [1-4]). Our theory [1-4] finds in BISCCO at M point on Fermi level at T=13 K asson energy about $14 \pm 8\ meV$. We predict that these assons create a new kink in electron energy at this energy. Also, a single pair transitions are possible which involve two assons. (1) R. R. Sharma, Phy. Rev. **B 63**, 054506 (2001). (2) R. R. Sharma, Physica **C 439**, 47 (2006). (3) R. R. Sharma, Physica **C 468**, 190 (2008). (4) R. R. Sharma, "Dipolon Theory of Kink ...", in "Superconducting ...", Ed. K. N. Courtlandt, P. 81-100, Nova Sc, Pub., Inc., New York, 2009. (5) R. R. Sharma, http://meetings.aps.org/lnk/BAPS.2015.MAR.D9.15.

Ram R Sharma
University of Illinois at Chicago

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