# Strong electronic correlations, exchange and superconductivity: Theory and experiment match for the cuprates

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In my talk I will summarize our approach to the theory of high temperature superconductivity in the cuprates [1] and concentrate on the quantitative comparison to experiment. The most important thing is to combine the strong interelectronic correlations and kinetic superexchange, at least within a variation approach to reach an overall agreement for static (equilibrium) properties and dynamic excitations – paramagnons and plasmons. The single-band (t-J-U model) and three-band versions of the approach are briefly characterized. Some still missing features are discussed at the end.

**References:**

[1] J. Spałek, M. Fidrysiak, M. Zegrodnik, and A. Biborski, Phys. Rep. **959**, pp. 1-117 (2022).

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