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Type: **Talk**

## Beyond the phenomenology of the BCS model

*Wednesday 23 August 2017 18:00 (30 minutes)*

The BCS model is revisited and it is shown that the phenomenology predicted by it is much richer than it was thought before. I will show in realistic situations that the phase transition from the superconducting state to the normal (metal) state may be of the first order (the energy gap may have a jump at the phase transition), there may be two solutions for the energy gap equation, etc.

I show both, zero temperature [1] and finite temperature results [2].

[1] D. V. Anghel, arXiv:1609.07931.

[2] D. V. Anghel and G. A. Nemnes, Physica A 464, 74 (2016).

### **Topic:**

Topic: Quantum Physics, Quantum Optics and Quantum Information

### **Summary**

**Author:** Dr ANGHEL, Dragos-Victor (IFIN-HH)

**Presenter:** Dr ANGHEL, Dragos-Victor (IFIN-HH)

**Session Classification:** Parallel session

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