# (Color) Superconductivity and Superfluidity with vector meson

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**Abstract**

The effects of a classical vector meson coupled to fermions - which undergo to superfluid and/or superconductive states, of color for example, - at zero and finite density are studied. The difermion condensates are obtaining by the one boson exchange [1] which may represent an effective degree of freedom of the dense matter or not. The classical gauge vector meson is covariantly coupled to fermions and to the boson responsible for the superconductive state. It may acquire a mass due to *in medium*, finite density, effects [2].

## References

[1] M. Alford, K. Rajagopal, F. Wilczek, Phys. Lett. **B 422**, 247 (1998). R.D. Pisarski, D. Rischke, Phys. Rev. **D 60** 094013 (1999).

[2] F.L. Braghin *in preparation.*

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