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# To grow or not to grow: Thermo-magnetic behavior of the strong coupling

The properties of strongly interacting matter at finite temperature in a magnetized medium have received a great deal of attention in recent years. This is mainly due to the so called Inverse Magnetic Catalysis (IMC) phenomenon found by LQCD calculations, whereby the pseudo critical quiral phase transition temperature and the quark condensate above this transition temperature decrease as a function of the magnetic field intensity. In this talk I report on recent findings on the strong coupling properties when its temperature and magnetic field dependence are considered. By means of a renormalization group analysis, I show that when the magnetic field intensity is the dominant scale, the strong coupling increases as a function of the field strength. However, when the temperature is the dominant scale the strong coupling decreases as a function of the field strength. I also argue that this phenomenon is linked to the IMC phenomenon.

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