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The Magneto-Sono-Luminescence and its signatures in photon and dilepton production in heavy ion collisions

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I introduce a novel mechanism for anisotropic photon and dilepton production in heavy ion collisions, stemming from the interplay between the fluctuations of gluonic matter, fermionic loops and the existence of strong (electro)magnetic fields. A particular example of this mechanism is tied with the conformal anomaly of QCD and described by the hydrodynamical bulk modes of QCD plasma. I show that it leads to the photon production yield that is comparable to the yield from conventional sources. Furthermore, this mechanism provides a significant positive contribution to the azimuthal anisotropy of photons (v_2) and shows agreement with the PHENIX data.

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