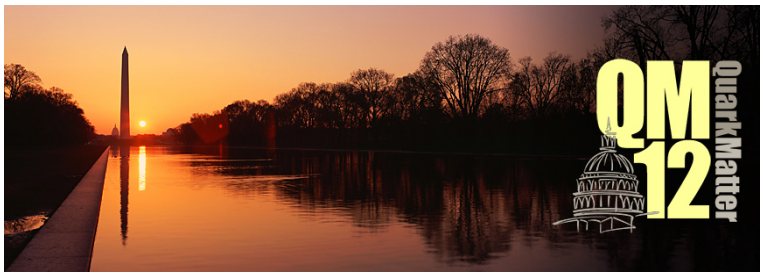


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# Intense Magnetic Field Production in Non-Central Relativistic Nucleus-Nucleus Collisions

*Thursday, August 16, 2012 4:00 PM (2 hours)*

A very intense magnetic field is expected in non-central nucleus-nucleus collisions, and to reach ˜ 10ˆ14 T at the LHC energies. Not only being the strongest magnetic field in the Universe (cf. ˜ 10ˆ11 T on the surface of magnetars), various consequences of physics interests are in discussion, including chiral magnetic effects, synchrotron radiation, and non-linear behaviors of QED e.g. photon splitting and real photon decaying into dileptons. It should be however noted that the field itself is yet to be directly detected. We evaluate the expected intensity and life time of the field, based on cascade and static models, and its possible effects on real/virtual photon anisotropy and polarization, based on QED calculations of photon vacuum polarization tensors. A new approach to detect the field via direct virtual photon polarization is proposed and its experimental feasibilities at ALICE and PHENIX experiments are examined.

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