Electromagnetic probes and heavy flavor from RHIC to LHC

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It is now well established that strongly-interacting quark gluon plasma (sQGP) is formed in heavy ion collisions at RHIC. This discovery is confirmed at LHC, where a QGP with three times higher energy density is formed. Electromagnetic probes (direct photons and lepton pairs) and heavy quarks (c and b quarks and cc and bb bound states) have central roles to investigate the properties of the QGP. In this talk, I review experimental study of QGP at RHIC and LHC with electromagnetic probes and heavy quark probes.