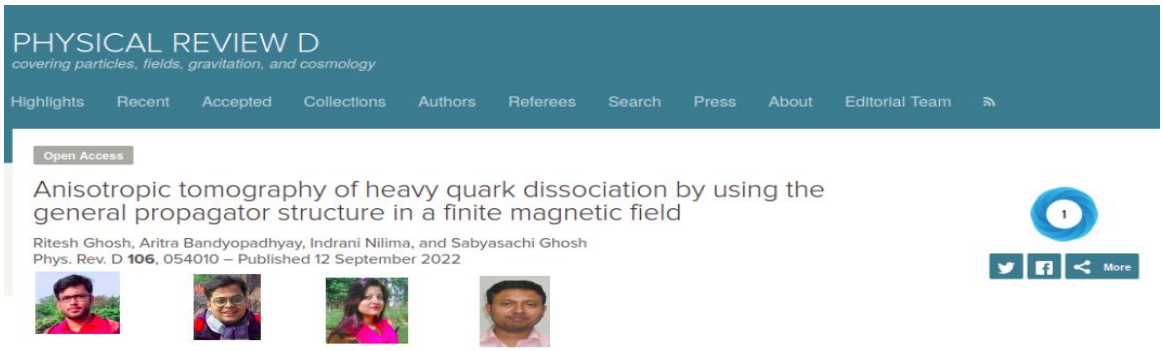
Anisotropic tomography of heavy quark dissociation by using the general propagator structure in a finite magnetic field



Dr. Sabyasachi Ghosh and his research group have theoretically investigated the mathematical structure of the potential between a heavy quark and an antiquark in presence of an external magnetic field. We know that among the four fundamental forces (Gravity, Electro-magnetic, Strong & Weak), strong force is unique. Its force strength increases as two particles go farther apart from each other. It is similar to when two friends become “out of sight”, their attraction increases (really odd) instead of being “out of mind”. Other forces, e.g. Gravity, Electro-magnetic, generally follows the “out of sight, out of mind” nature because their potentials are inversely proportional with distance. Now, this unique strong force potential (in addition to the Electromagnetic Coulombic part) between a quark and an antiquark (written in the picture), which can be indirectly measurable in LHC, CERN (accelerator facility in Switzerland), is theoretically calculated by using advanced mathematical tools, called “quantum field theory” (at finite temperature and magnetic field).