**Title:** **STUDIES OF STANDING AND DISSIPATIVE SHOCKS AROUND ROTATING BLACK HOLES.**

**Abstract:** In the present work, we study the properties of standing and dissipative accretion shocks around a Kerr black hole. We consider accretion flows around a stellar-mass black holes which emit hard X-rays from the post-shock region, also known as Compton cloud and located close to the inner edge of the disc. The radiative loss primarily comes from the thermal and kinetic energy of the flow during its pre-shock to post-shock transition phase and takes place via Comptonization process. To explain the temporal variation of this radiative loss, we study the dynamical properties of the disspative shocks as well as the standing shocks in a self-consistent way and compare the results. We quantitatively show how the energy loss at the shock affects the location of the shock itself around a rotating black hole. We find that for a suitable range of input parameters, the upper limit of the maximum release of energy at shock could be as high as 100 percent of the total available energy of the inflow matter without violating the Rankine–Hugoniot shock conditions. However, as the energy remove is significant, shock moves forward towards the black hole. We also compute the region of the parameter space (Energy vs. Angular momentum) and find that the effective area of parameter space is enhanced significantly as the dissipation is increased. The implication of this could be profound in studying the QPOs observed in several black hole candidates, such as XTE J1550−564 and GRO J1655−40, during their outbursts. The QPOs evolve rapidly and the frequency changes from several mHz to a few tens of Hz in its rising phase. This could be explained with the help of dissipative shock oscillation as the size of the post-shock region varies according to the energy released from it.