

sirf: self-irradiated funnel

The multi-blackbody "Self-Irradiated Funnel" model is designed to model optically-thick outflow-dominated accretion. The basic idea is simple: you just assume a lot of matter, angular momentum and energy emerges in a limited volume. Momentum conservation leads to non-sphericity of the flow that has subsequently conical (funnel-like) shape. The model calculates temperature distribution at the funnel walls (taking into account irradiation by iterative process) and the outer photosphere. We also assume that inside the cone there is a deep pseudo-photosphere. Relativistic boosts are taken into account for high velocities. For a comprehensive description of the physical model, see: [Abolmasov, P., Karpov, S. and Kotani, T. PASJ, 61, 2, 213.](#)

par1	tin, inner temperature (at the inner, inside-the-funnel photosphere).
par2	rin, inner (inside-the-funnel photosphere) radius in "spherisation radius" units (the latter is defined as $3 K \dot{M} / \Omega_f c$).
par3	rout, outer photosphere radius in "spherisation radius" units.
par4	theta, half-opening angle of the cone.
par5	incl, inclination angle of the funnel. Affects mainly self-occultation and relativistic boost effects.
par6	valpha, velocity law exponent, v goes as r^{valpha} .
par7	gamma, adiabatic index. It affects the inner, hotter parts of the flow, therefore we set is to 4/3 by default.
par8	mdot, mass ejection rate in Eddington (critical) units.
par9	irrad, number of iterations for irradiation.
norm	