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## Modified viscosity in accretion disks

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Black holes surrounded by accretion disks are present in the Universe in different scales of masses, from microquasars, up to the Active Galactic Nuclei. The basic theory of a geometrically thin, stationary accretion is based on a α description which assumes the proportionality between non-diagonal stress tensor term and the total pressure. Domination of thermal pressure leads to thermal instability, which results is limit-cycle oscillations in sources like like GRS1915+105 and IGR J17091-3624. In our work we examined large grid accretion disk models with generalized description of viscosity.

In general, the range of the oscillation limit-cycle can be reduced by magnetic field. We model its influence by effective description, extending the global code GLADIS on the μ magnetic viscosity parameter. We used this procedure to determine the mass of the intermediate mass black hole of HLX-1 and its accretion rate from the features of the observed flares, detected by the Swift X-ray satellite. Furthermore, we extend our model including atomic processes adding another terms to the optical depth determining cooling function. It affects stability and instability of the disk in case of Active Galactic Nuclei.

Serdecznie zapraszam,
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