[구GC-17] Mass Accretion Rate of Accretion Flow

박명구
경북대학교 천문대기과학과

Gravitating body can accrete surrounding gas, and how much it accretes depends on the conditions of gas at the outer boundary. When the surrounding gas has no angular momentum, the mass accretion rate is determined only by the density and the temperature of the gas, and is known as the Bondi accretion rate. However, the mass accretion rate of the accretion flow in the presence of the angular momentum has not been studied yet. In this work, I solved the slim disk equation with alpha viscosity to find the transonic global solutions, and studied the characteristics of the flow and its mass accretion rate. The mass accretion rate of the rotating viscous accretion flow depends on the angular momentum of the gas and can be a few orders of magnitude smaller than the usual Bondi accretion rate for the same density and temperature of the gas at the outer boundary.

[구GC-18] Progress Report of AKARI/FIS Deep Observations on the Detection of CFIRB

Woong-Seob Jeong[1], Hyung Mok Lee[2], Chris Pearson[3], Takao Nakagawa[4], Shuji Matsuura[4], Mitsunobu Kawada[5], Sang Hoon Oh[2], Sungho Lee[1], Ho Seong Hwang[6], Hideo Matsuhara[4]
[1]Korea Astronomy and Space Science Institute, South Korea, [2]Seoul National University, South Korea, [3]Rutherford Appleton Laboratory, UK, [4]ISAS/JAXA, Japan, [5]Nagoya University, Japan, and [6]KIAS, South Korea

The Cosmic Far-Infrared Background (CFIRB) contains information about the number and distribution of contributing sources and thus gives us an important key to understand the evolution of galaxies. Using a confusion study to set a fundamental limit to the observations, we explore the CFIRB with AKARI/FIS deep observations.

Based upon source distribution models, an extensive model for diffuse emission from infrared cirrus, and instrumental noise estimates, we estimated a comprehensive analysis for the determination of the confusion levels for deep far-infrared observations. Our comparative study between estimated confusion levels from our observations and those from our model enables us to understand the nature of CFIRB. Here we report the preliminary results on the detection of CFIRB.