

[SS2-4] **BLACK HOLE MASSES AND ACCRETION RATES OF QUASARS FROM SLOAN DIGITAL SKY SURVEY**

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QSOs are thought to be consisted of an optically thick but geometrically thin disk which is driven by accretion at near the Eddington rate. Such a disk has an effective temperature that is proportional to the black hole mass and accretion rate. In this study we test whether such assumptions are correct using 20 spectra of quasars from the Sloan Digital Sky Survey. We have fitted each spectrum with a theoretical model to find the best-fit parameters such as, black hole mass and accretion rate. As an independent check, we obtained the black hole mass using virial mass estimator from the broad-line region, and the accretion rate from broad emission lines. We present a detailed comparison between the results obtained by these two independent methods. The best-fit central black hole masses for the 20 sample span 8.1 - 9.6 solar mass in log scale and the accretion rates are in broad agreement with the values assumed in the model. We find that the accretion rates obtained by both methods are moderately correlated. But the black hole masses obtained by the theoretical method tend to be over-estimated. The reasons of the disagreement are discussed in the following points of view: (1) the Comptonization by hot corona and non-LTE effect, (2) inclination effect, and (3) intrinsic reddening.

[SS3-1] **별 탄생에 관한 표준과 난류 이론**

김중수

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이 발표에서는 별 탄생에 관한 표준 이론과 난류에 기반을 둔 이론을 서로 비교 분석할 예정이다. 먼저 표준 모형을 이해하는 데 필요한 임계 질량자속비에 (critical mass-to-flux ratio) 대한 개념을 비리얼 정리를 통해서 소개한다. 그 다음 모호극성 확산(ambipolar diffusion)에 기반을 둔 별 탄생에 관한 표준 모형을 설명하고 이의 문제점을 열거한다. 이에 반하여, 최근에 새롭게 제안된, 초음속 난류에 기반을 둔 이론의 골격을 간단히 설명한다. 마지막으로 난류를 띠고 있는 분자운에서 코아의 형성에 관한 수치 계산 결과를 소개하고, 여기서 코아의 나이와 별 탄생에 관하여 논의한다.