of cluster containing 10 $M_\odot$. In the present study, we compute three-body interactions including gravitational radiation reaction by using regularized scheme, we find that a large fraction of binary-single reactions leads to the "merger" of two black holes due to the energy loss by gravitational radiation.

Generation of Primordial Magnetic Field During Inflationary Phase Transition

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Large-scale primordial magnetic field are generated during inflationary phase transition. We calculate the field spectrum exactly through a bogoliubov transfotmation during de Sitter space. Subsequent evolution of the primorial magnetic field during radiation dominated and matter dominated era are also discussed.

Precession of Supermassive Black Holes

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In the previous work we made a long term evolution code for the central black hole in an active galactic nucleus under the assumption that the Blandford Znajek process is the source of the emission. Using our code we get the evoution of the angular velocity of the precession for a super-massive black hole. We consider a hole at the center of an axisymmetric, ellipsodial galactic nucleus. our numerical results show that, only for the cases such that the stellar density or the mass of the black hole is large enough, the precession of the black hole-presumaly the precession of the galactic jet-is interestingly large.

Pleiades 성단의 현재 질량함수와 Wielen Dip

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Pleiades성단 중심 주위 $4° \times 4°$ 영역에서 $V-21$등급 ($M_v \sim 15.^m5$)까지 관측된 구성원 별들로부터 얻은 광도함수에서 $M_v \sim 7^m$ 에 dip이 존재하며, 이것은 국부항성계의 광도함수에서 보이는 wielen dip과 동일한 위치에서 나타난다. 그리고 광도함수의 최대치는 $M_v = 12^m \sim 13^m$ 에서 나타나며, 이 위치는 국부항성계의 광도함수에서 보이는 tyrnover 점과 거의 같다. Pleiades 성단의 전반적인 광도함수의 형태는 국부함수의 경우와 같다. 또한 Pleiades 성단의 현재질량함수의 형태는 국부항성의 초기질량함수와 유사하다.