Polarization of Resonantly Scattered Radiation from Relativistic Outflows in Broad Absorption Line Qauasars

Lee Hee-Won[1], Bang Jeong Hoon[2], Baek Kyeong Min[2],
Jeon Yeon Kyeong[2], and Kang Suna[1]
[1]Dept. of Astronomy, Sejong University
[2]Uijeongbu Science High School

About 10 percent of quasars are known to exhibit deep broad absorption troughs blueward of prominent permitted emission lines, which are ususally attributed to the existence of outflows slightly above the accretion disk around supermassive black hole. Typical widths up to 0.2 c of these absorption troughs indicate the velocity scales in which special relativistic effect may not be negligible. In this presentation, we provide our Monte Carlo calculation of linear polarization of resonantly scattered line radiation with the careful considerations of special relativistic effect. In particular, we apply our calculation to the singlet transition C III 977 and the line locking of Ly alpha and N V 1240, which may contribute to our understanding of unifying scheme of normal quasars and broad absorption line quasars.