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Chemi-ionization/recombination processes in the AGNs Broad-Line Region

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The chemi-ionization and the corresponding chemi-recombination processes in atom - Rydberg atom collisions, are considered as factors of influence on the ionization level and atom excited-state populations in clouds in BLR region of AGN. The presented results are related to the moderately ionized layers of dense parts of the BLR clouds. It has been found that the investigated chemi ionization/ recombination processes (for principal quantum number $2 \leq n \leq 20$, densities greater than 10^{12} cm $^{-3}$ and 4000 K $\leq$ T $\leq$ 20000 K) dominate over the relevant concurrent processes. Consequently, this is an indication that the considered chemi ionization/recombination processes should have a very significant influence on the optical properties of regions in AGN with such conditions.