# Investigation of the UV radiation process in NGC 2023

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NGC 2023 is a reflection nebula embedded in the L1630 molecular cloud in the constellation of Orion and is an active region of star formation.By analyzing the H2 absorption bands at 1045-1060A and 1086-1102 A regions, we obtain the column densities of H2 and CO in the nebula toward HD 37903. Using theoretical analysis, we derive some physical conditions of NGC 2023, such as the hydrogen density n, temperature T, and UV density I . "CLOUDY"is a radiative-collisional equilibrium program to simulate emission lines for various regions. We run CLOUDY with input parameters for NGC 2023 to reproduce the observational results. In this procedure, we obtain the physical conditions of NGC 2023 and compare the results with those from theoretical analysis. We are able to describe the detail physical structure of NGC 2023.