

## THE INTERSTELLAR OH AND H<sub>2</sub>O MASERS

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The masers in the regions of star formation are mainly both H<sub>2</sub>O and OH masers. They are related to the early evolution of stars. That is why an understanding of the excitation mechanism is of central importance for the discovery of physical characteristics of star formation regions. Unfortunately, the excitation mechanism is not understood well yet. So far there are two kinds of known mechanisms: Collision and Radiation mechanism. But there are still serious puzzles with these mechanisms. The criticisms of radiation excitation mechanism were its short of pumping photons and its dissociation of H<sub>2</sub>O and OH molecules by the radiation itself.

We notice that the remarkable features of star-formation regions are its ultra-cold environment, its strong VUV radiation and its coincident appearance of the H<sub>2</sub>O and OH masers. Therefore, we argue a new excitation mechanism. It can unifiedly interpret both H<sub>2</sub>O and OH interstellar masers. This mechanism uses a wider frequency range of photons and includes a scheme for the regeneration of interstellar H<sub>2</sub>O and OH molecules. Those are different from former radiation excitation mechanism.