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## Regulated Physical Conditions of the Star Forming Clouds in the Central Regions of Galaxies

Soojong Pak<sup>1</sup>

<sup>1</sup>*Korea Astronomy Observatory, Whaam-Dong, Yuseong-Gu, Daejeon*

The central regions of late-type and interacting galaxies are actively forming stars. This process affects the physical and chemical properties of the local interstellar medium (ISM) as well as the evolution of the galaxies. We observed near-IR H<sub>2</sub> emission lines from the central ~1 kpc regions of the archetypical starburst galaxies, M82 and NGC 253, and the normal spiral galaxies, NGC 6946 and IC 342. Like the far-IR luminosity, the near-IR H<sub>2</sub> emission luminosity can directly trace the amount of star formation activity because the H<sub>2</sub> emission lines arise from the interaction between the hot and young stars and their nearby neutral clouds. The ratios of the H<sub>2</sub> v=1-0 S(1) line to far-IR continuum luminosities are remarkably constant over a broad range of galaxy luminosities, e.g., in normal late-type galaxies (including the Galactic center), in nearby starburst galaxies, and in luminous IR galaxies. Examining this constant ratio in the context of photodissociation region models, we conclude that it implies that star formation rates follow the gas density, i.e., the Schmidt Law, in the central regions of galaxies with a wide range of star formation activity.