



Photoionization and Photodissociation Models

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Understanding the reprocessing of radiative energy by interstellar matter is of fundamental importance for theoretical astrophysics and for the interpretation of observations of objects at all scales, from protoplanetary disks to entire galaxies. Over the years sophisticated models of photoionization and photodissociation regions have been developed to capture all the intricacies of the couplings between radiation and matter. In this lecture, I will describe the fundamental microphysical processes that govern the structure, thermodynamical state, and emission of photoionization and photodissociation regions, briefly evoke the current evolution of state-of-the-art models, and present a few application examples.