Modelling of turbulent ISM and corresponding molecular tracers

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Coupling the dynamical processes with the chemistry is a mandatory step for our understanding of the interstellar medium, and particularly for the molecular clouds. Yet due to the complexity of these environments, which are turbulent, magnetized and multi-phase as well as the complexity of the chemistry, this represents an enormous challenge, which can only be partially addressed. During the talk, I will make a review of the various attempts, which have been made and the different strategies, which have been used so far.