

Complex Organic Molecules in Star Forming Regions

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The conditions for planet formation and the emergence of life is one of the key-questions in modern astrophysics. Thanks to the recent spectacular progress in radioastronomical observations, we are now in position to address the question of our "chemical origins", namely to understand the evolution of matter and molecular complexity during the long process that brought it from prestellar cores, to protostars, protoplanetary disks, and ultimately to the bodies of the Solar system.

Spectral line surveys constitute the most powerful diagnostic tool to study the emergence of molecular complexity in star forming regions. Such surveys are now routinely carried out with the major (sub)millimeter facilities in the World and have brought a new perspective on the formation of organic molecules, which help us improve our understanding of chemical networks and the emergence of molecular complexity in star-forming regions

I will review the main results recently obtained in the domain and I will discuss the perspectives offered in this context with the advent of the large millimeter arrays ALMA and NOEMA

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