

## **A Simple Model for Growth of a Planar Hydrogenated Carbon Cluster under Interstellar or Circumstellar Conditions**

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The physico-chemical origin of the hydrogenated carbon clusters (cumulenes, PAHs, graphite or amorphous carbon) in space is still an open question. We have worked out a numerical simulation code in order to build up planar (graphite-like) carbon clusters. We assume that hydrogen atoms can fix on the carbon skeleton following a random process allowing for H<sub>2</sub> formation. The structures we have found are very complex. In a given cluster, several molecular entities can simultaneously be present: (sp<sub>2</sub>) carbon chains, rings or compact formations (aromatic structures or small PAHs). We argue that these very contorted hydrogenated structures could be ubiquitous in the interstellar medium, in carbon-rich circumstellar regions and in PNe.