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Abstract:

As an old and dense stellar system, Globular Cluster plays the role of the “pulsar mine” for a long time. However, the radio pulsar population of the Open Clusters, even the old massive and dense ones, is poorly investigated. The pulsar formation in different stellar systems is a vacant field. Are the neutron stars and their Supernovae progenitor in Open Clusters initially distinct from those in Globular Clusters? What kind of pulsar population should the Open Clusters have? These question and problems are barely addressed in the literature. Deeper searches and studies on the pulsar population in Open Clusters can not only shed a light on the the nature and evolution of neutron stars , but also help understand the formation and evolution of stellar clusters. To address these questions, we propose to search for pulsars in the Galactic Open Clusters, both in the old massive clusters as a link between Globular Clusters and Open Clusters, and in young massive ones which have just experienced the explosion of massive stars and formed new neutron stars.