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## The new detection of blue straggler stars in 50 open clusters using Gaia DR3

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The particularly abundant presence of blue straggler stars (BSS) in Galactic open clusters offers favorable conditions for detailed studies on the statistical properties and the origin of the blue straggler population. With the help of Gaia DR3, the number of identified open clusters continuously increases, and the determination of star cluster members is more reliable. We performed a homogeneous and more thorough search for BSS in newly found open clusters by implementing a uniform membership determination for over one thousand newly identified open clusters with larger sky coverage based on the Gaia DR3 astrometric and photometric data. The membership probabilities of stars were assigned by the pyUPMASK algorithm. Then we estimated the physical parameters of these clusters by isochrone fitting on their CMDs and picked out BSS in the specific region of these CMDs. As a result, we identified 138 BSS that had not been reported before in 50 open clusters. Compared with the latest catalogs that present a total of about 1500 BSS in 339 open clusters, our new catalog increased the number of BSS in Galactic open clusters by about 10%, and the number of open clusters with BSS by nearly 17%. In the future, more accurate abundance measurements are anticipated to better probe the formation pathways of BSS in open clusters.

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