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G and K candidate Hyper-velocity stars revisited

Poster Abstract: Hypervelocity stars (HVS) move so fast that they are unbound to the Galaxy. The spatial and velocity distribution of HVSs provides significant constraints on the shape and density distribution of the Galactic dark matter halo. When they were first discovered in 2005, dynamical ejection from the super massive black hole in the Galactic Centre (GC) was suggested as their origin. The two dozen of HVS known today are young massive B stars of 3-10 solar masses. Recently, 48 HVS candidates of low mass were discovered in the Segue G and K dwarf sample and Lamost survey. We embarked on a kinematic analysis of the Segue HVS candidate sample based on new proper motion measurements using the full 6D phase space information. Their orbital properties can then be derived by tracing back their trajectories in different mass models of our Galaxy. We present the results for 14 candidate hypervelocity stars and discuss their origin. Our conclusions for these stars are inconsistent the published results.