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On Stellar Migration from the Andromeda Galaxy

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Recent *Gaia* observations suggest that some hypervelocity stars (HVSs) might originate from outside the Galaxy. We ask if these HVSs could come from as far as Andromeda. Therefore, we simulate HVSs originating in Andromeda with initial conditions based on attributes of high velocity stars measured in the Milky Way and a simple model for the gravitational potential of Andromeda and the Milky Way. We evaluate the validity of this scenario based on the simulation results. We find that the scenario is possible according to the simulation results, but unlikely to be responsible for the majority of presumably extragalactic HVSs observed in the Milky Way. Further, we analyse the properties of HVSs that are able to reach the Milky Way and discuss whether they could be detected experimentally.

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