

From star clusters to field populations: survived, destroyed and migrated clusters



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Dynamical evolution of open star clusters in Milgrom-law-dynamics

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The sun is located at a Galactocentric distance where the transition from Newtonian to MoNDian dynamics is expected to occur. Due to their proximity solar neighbourhood open star clusters are ideal kinematical laboratories to discriminate between the validity of Newtonian or MoNDian dynamics. Direct MoNDian N-body integrations of open star clusters embedded in an external field are performed by the application of Milgrom's law. The evolution of open star clusters in Newtonian and MoNDian dynamics show three main differences: i) The tidal tails are populated asymmetrically in MoND. The leading tail hosts more members than the trailing arm, whereas in Newton the tidal arms are populated nearly symmetrically. ii) Open star clusters dissolve approximately 30% faster in MoNDian dynamics than in Newtonian dynamics. iii) Open star cluster appear slightly super-virial when their internal kinematics is interpreted in Newtonian dynamics.

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