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Star formation history of the Milky Way thick and thin discs from chemical evolution models

Thursday 8 May 2025 09:30 (20 minutes)

I will discuss the formation and evolution of the Milky Way thick and thin discs from the point of view of detailed Galactic chemical evolution models. To model the evolution of these two components and explain the observed bimodality in the [α/Fe] vs. [Fe/H] plot, two different approaches can be adopted. In particular, (i) a sequential scenario called two-infall approach where the thick disc forms fast and before the thin disc and by means of a fast gas accretion episode, whereas the thin disc forms by means of a second accretion episode on a longer time-scale; (ii) a parallel approach, where the two discs form in parallel but at different rates. By means of chemical evolution models, I will show new results for the star formation history of the Milky Way thick and thin discs in the light of recent data for abundance patterns, metallicity distributions and age distributions of thick and thin disc stars.

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