Contribution ID: **97**   Type: **Invited talk**

Chemodynamical models of the Milky Way (invited talk)

Wednesday, 6 September 2023 14:25 (30 minutes)

I present a framework for constructing self-consistent dynamical models of our Galaxy described by distribution functions in action space, and its extension to the chemical space (metallicity and alpha). The models are fitted to the data from Gaia DR3 and APOGEE DR17, and contain several disc components with varying chemodynamical properties, as well as the stellar and dark haloes. The models qualitatively recover salient features of the Galactic disc, such as the transition from alpha-enhanced to alpha-poor populations in the geometrically thick disc, which occurs roughly at the Solar radius, but do not match the extensive available data in every detail, despite having over 100 tunable parameters. I outline the pathways for future improvements on the modelling side and how they could benefit from the upcoming observational advancements.

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