White dwarfs and the Galactic chemodynamics

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The Solar neighborhood is a complex ensemble of overlapping stellar populations that have formed at different times and locations in the Milky Way. Although their atmospheres lose memory of their past lives, white dwarfs behave as regular astrophysical clocks that can help us to trace the star formation history of our Galaxy, as well as its stellar dynamics and the local age - velocity dispersion relation. White dwarfs in wide binary systems with non-degenerate stars share the same chemical composition of their companions. Hence, they can also trace the chemo-dynamical evolution of the Solar neighborhood as a function of time. We will present the results of our recent paper dissecting the 6D kinematics of white dwarfs in isolation and in common proper motion pairs. Moreover, we will discuss new results on the chemical evolution of the Solar neighborhood and how it can be traced by white dwarfs thanks to the synergy between Gaia and spectroscopic surveys.