Title: Physical stellar properties of red giant binaries in Gaia DR3

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The study of binary stars is fundamental for stellar physics in many respects, particularly their role in stellar evolution as precursors of supernova events, as well as being the most reliable stellar systems from which fundamental physical stellar properties (masses, luminosities and radius) can be derived. Gaia DR3 has given an unprecedented data set for the study of binary stars, providing an all-sky homogeneous sample of photometry and spectroscopy observations for millions of stars in our Galaxy. The long baseline of Gaia observations and the multi-epoch information allow for recovering different kinds of binary systems, such as visual, astrometric, spectroscopic and eclipsing binaries. In this talk, I will present the results of combining different Gaia data to derive the physical parameters of close (40 < orbital period < 400 days) spectroscopic red giant binaries: the fundamental parameters of the primary component (mass, radius, luminosity) based on Gaia photometry and spectroscopy, and the properties of the secondary component (mass, eccentricity, mass ratio) using multi-epoch photometry and spectroscopy. Among the close-binary red giant stars, two types were found: ellipsoidal variables (tidal distortion of the primary) and RS Cvn systems (tidally locked, chromospherically active). The properties of these populations (activity index, mass function, period-radius, period-eccentricity, metallicity) will be discussed, as well as their chemo-dynamical properties with respect to the Milky Way disk/halo stellar populations.