Présentation orale pour l'atelier S15 : The Local Group in the Gaia era

Title: Creating the faint branch of the Sagittarius stellar stream

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Abstract: We investigate ways to produce the bifurcation observed in the stellar stream of the Sagittarius (Sgr) dwarf galaxy. Our method consists in running N-body simulations of the Sgr falling into the Milky Way (MW) with added test particles spanning a wide range of initial phase space, energy, and angular momentum distributions. We find that particles ending up in the faint branch of the Sgr stream are predominantly high angular momentum particles contained in spiral features in a plane with angle -20° to -30° from the orbital plane of the Sgr at the start of the simulation. These features would thus already be present 3 Gyrs ago and could be the result of e.g. a disky Sgr being perturbed when crossing the disk of the MW, tidal effects, or the tidal tails of a satellite being disrupted within the Sgr.