

ERRATUM

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# Erratum: Particle Dark Matter constraints: the effect of Galactic uncertainties

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## 1 Erratum

This erratum corrects the following mistakes in our paper “Particle Dark Matter Constraints: the Effect of Galactic Uncertainties”: values of the stellar mass of the Milky Way (MW) in column 4 of table 1, values of the total MW mass quoted in text, and a typo when referring to the value of the total MW as quoted in the Sagittarius stream paper [1].

Here we provide a correct version of table 1 (stellar mass of the MW corrected, column 4), and replace the final, corrected version of the text (original lines below table 1 in page 5).

No other element of the paper has changed, and conclusions are unaffected.



Morphology	$R_0$ (kpc)	$v_0$ (km/s)	$M_*$ ( $\times 10^{10} M_\odot$ )	$\gamma$	$\rho_0$ (GeV/cm <sup>3</sup> )	Reference
BjX	8	230	$4.6^{+0.6}_{-0.5}$	$1.11^{+0.04}_{-0.03}$	$0.466 \pm 0.010$	[2–5]
BjX	7.5	312	$4.2^{+0.6}_{-0.5}$	$0.633^{+0.019}_{-0.020}$	$1.762 \pm 0.017$	[2–5]
BjX	8.5	180	$5.1^{+0.7}_{-0.6}$	$2.02 \pm 0.07$	$0.055 \pm 0.004$	[2–5]
FkX	8	230	$4.3 \pm 0.5$	$1.38^{+0.03}_{-0.02}$	$0.427^{+0.007}_{-0.008}$	[4–7]
DiX	8	230	$5.6 \pm 0.7$	$0.43^{+0.07}_{-0.06}$	$0.405 \pm 0.011$	[4, 5, 8, 9]
CjX	8	230	$4.8^{+0.7}_{-0.6}$	$1.03 \pm 0.04$	$0.471^{+0.010}_{-0.011}$	[3–5, 10]
FiX	8	230	$5.2 \pm 0.6$	$0.82 \pm 0.05$	$0.387 \pm 0.010$	[4–6, 9]

**Table 1.** We adopt a gNFW density profile with  $R_s = 20$  kpc. From left to right we report the nomenclature adopted for each morphology, the values of Galactic parameters ( $R_0$ ,  $v_0$ ), the baryonic mass in the Galaxy for that specific baryonic morphology, the best-fit values of index  $\gamma$  and  $\rho_0$  according to the procedure described in the text, the value of  $\chi^2$  per degree of freedom, and the references for the three-dimensional morphology shape. Quoted uncertainties are  $1\sigma$  (68% confidence level) here and elsewhere unless otherwise stated. The criteria that led to the choice of these morphologies are explained in the text.

## 1.1 Changes

When varying Galactic parameters, we obtain the total mass of the MW within 50 kpc to be in the range  $M(< 50) = (1.2\text{--}22.9) \times 10^{11} M_\odot$ . The lower limit is in agreement with previous determinations [1, 11–14], while the larger MW masses we obtain can not be directly compared, as the adopted Galactic Parameters are different than ours. When varying baryonic morphology, the minimum/maximum values obtain are  $M(< 50 \text{ kpc}) = 4.36^{+0.11}_{-0.10} \times 10^{11} M_\odot$  and  $M(< 50 \text{ kpc}) = 7.0 \pm 0.3 \times 10^{11} M_\odot$ . The former value for the variation of morphology is in good agreement with mass estimate from kinematics of globular clusters, satellite galaxies and halo stars [11, 12, 14, 15]. There is, however, a discrepancy at the  $1\sigma$  level with the independent determination in [1], that used the Sagittarius stream, and is slightly smaller than the other cited determinations. All our results are in agreement at the  $1\sigma$  level with the recent estimate of the dynamical mass [16] within the region of the Galactic bulge, as in the analysis presented in [17]

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