Charting nearby dust clouds using \textit{Gaia} data only
\textit{(Corrigendum)}

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\textsuperscript{1} A&A, 631, A32 (2019), https://doi.org/10.1051/0004-6361/201935093
\textsuperscript{2} Key words. dust, extinction – local interstellar matter – methods: data analysis – solar neighborhood – errata, addenda

In Table 1 we presented a comparison of different dust inference methods and their applications. The following corrections are in order for that table:

\begin{itemize}
  \item In the row labeled “parallax uncertainty,” all methods except Green et al. (2018) and Sale & Magorrian (2018) take the parallax uncertainty into account during data selection in addition to what is stated in the table. Hereby the term “parallax” may refer to both astrometric parallaxes, that is to say distance estimates derived from the angular displacement of stars due to the observers displacement, as well as photometric parallaxes, that is distances derived from spectra using stellar models.
  \item In the column labeled “Kh et al. (2018b),” we misclassified the method of Rezaei Kh et al. (2018) as a 2D method. The method takes correlations in three dimensions into account similarly to Lallement et al. (2018), Sale & Magorrian (2018), and our own method. Furthermore, in the row “max voxel resolution” we stated the voxel resolution to be 200 pc, but it should be noted that the grid of this method is irregular and the voxel resolution is on average higher in angular direction. Thus 200 pc is the minimum voxel resolution for this method.
\end{itemize}

A corrected table is found below.

In our main text, in the second paragraph of the introduction we cite “Kh et al 2017,” which mistakenly refers to an IAU proceeding. The correct reference is Rezaei Kh et al. (2017).

\begin{table}
\centering
\caption{Comparison of the different dust inference methods with the one performed in this paper.}
\begin{tabular}{|c|c|c|c|c|}
\hline
 & This paper & Sale & Magorrian (2018) & Rezaei Kh et al. (2018) & Lallement et al. (2018) & Green et al. (2018) \\
\hline
\hline
Parallax uncertainty & Smoothing and data selection & Marginalization by sampling & Data selection & Data selection & Proper uncertainty handling \\
Max distance & $300 \sqrt{3}$ pc & 5 kpc & 6 kpc & $\approx 2 \sqrt{2}$ kpc & 3 kpc \\
Max voxel resolution & 2.3 pc & Not applicable & 200 pc radial & 5 pc & 16.4 pc/0.063 pc \\
Number of datapoints & 3.7 million & 6,349 & 21,000 & 71,357 & 806 million \\
Power spectrum inference & Yes & No & No & No & No \\
Correlations & 3D & 3D & 3D & 3D & 1D correlations only \\
Positiveness & Yes & Only of reddening & No & Yes & Yes \\
Statistical method & Variational Bayes & Expectation propagation & Analytic & Maximum posterior & Hamiltonian Monte Carlo \\
Data sets & Gaia DR2 & Synthetic Gaia data & APOGEE & Gaia DR1 + APOGEE + 2MASS & Pan-STARRS + 2MASS \\
\hline
\end{tabular}
\end{table}

\textbf{Notes.} The first row indicates how the photo- or astrometric parallax uncertainty of the stars was treated. Hereby referring refers to weighting a voxel in the line of sight by the survival function of the star radial distance. The distance of the furthest point in the reconstruction is given in the second row. The dimensions of the smallest voxel are given in the third row. For the reconstruction of Sale & Magorrian (2018) the concept of voxel resolution is not readily applicable; Sale & Magorrian (2018) use 140 inducing points spanning a region for which one could evaluate the posterior mean at any point. The resolution for Green et al. (2018) and Rezaei Kh et al. (2018) is different in radial/angular direction, we report only radial resolution for Rezaei Kh et al. (2018) and both for Green et al. (2018). The fourth row provides the number of used data points. The fifth row indicates whether the power spectrum is inferred. The sixth row states which kind of correlations are assumed for the reconstruction. Whether positivity of dust density is enforced can be read in the seventh row. The second to last row states the method, with which the posterior summary statistics was calculated from the unnormalized log posterior. In the last row the data sets used for the reconstruction are listed.

References

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