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AMS-02 antiprotons are consistent with a secondary astrophysical origin

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Cosmic ray antiprotons are among the best channels to constrain WIMP dark matter particle candidates. The compatibility of AMS-02 data with a pure secondary origin is currently actively debated. Using the USINE code and an improved methodology to extract the cosmic ray transport parameters from the B/C data, we derive a robust range of predictions for the secondary antiproton flux. We list and update the various sources of uncertainties, and further account for their correlations. We also introduce a correlation matrix of errors for the AMS-02 data. We show that AMS-02 antiproton data are consistent with a secondary origin within this framework.

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