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CORRIGENDUM

Bootstrap current and parallel ion velocity in imperfectly optimized stellarators Corrigendum

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Our recent paper (Catto & Helander 2020) presents a careful and rather general evaluation of the parallel ion flow and parallel current in an imperfectly optimized stellarator. As the disagreement between our and earlier analytical results (Shaing *et al.* 1989; Helander, Geiger & Maaßberg 2011; Landreman & Catto 2012; Helander, Parra & Newton 2017) and simulations (Beidler *et al*. 2011; Kernbichler *et al*. 2016) remains, we speculated on a possible cause of some of the disagreement. However, this explanation in § 8 of how a specious current might arise when an approximate form of the tangential drift is employed in simulations is flawed. Dr C. Beidler has observed that our speculation is invalid as stellarator symmetry causes the spurious terms to vanish. Stellarator symmetry requires the magnitude of the magnetic field of a stellarator to be exactly the same when it is turned over. Consequently, our paper needs to be modified in the following ways.

(1) Abstract: remove 'However, it is also shown … accurate drift kinetic equation is used'.

(2) Introduction: remove the entire second paragraph and the penultimate sentence of last paragraph.

(3) Section 2: between (2.7) and (2.8) remove the sentence 'Although these approximations … lead to errors in the parallel flows'.

(4) Section 5: between (5.2) and (5.3) remove the sentence 'However, it will be shown that …. considered in § 8'.

(5) Section 6: (*a*) replace the material a line above (6.8) by 'When used in (6.5), it gives the correct constraint'; (*b*) replace the final right side (not equal to zero, $\neq 0$) of (6.8) by equal to zero ($=0$); and (*c*) replace the remainder of the paragraph following (6.8) by 'Stellarator symmetry requires Δ_p to be symmetric, and $\partial \Delta_p / \partial \alpha$ to be anti-symmetric so all flux surface averages in (6.8) vanish'.

(6) Section 7: remove the very last paragraph.

(7) Section 8: remove all of § 8.

(8) Discussion: remove all of the penultimate paragraph.

(9) Appendix A: remove all of appendix A.

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We thank Dr Beidler for bringing this oversight to our attention. The discrepancy between analytic and numerical results for the bootstrap current remains unexplained.

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Declaration of interests

The authors report no conflict of interest.

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