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CORRECTION

Correction to: Improved Helioseismic Analysis of Medium-ℓ Data from the *Michelson Doppler Imager*

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Correction to: Solar Physics (2015) 290: 3221–3256 (Article I)
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In the first paragraph of Section 2, we gave an end date of 2001:

The line-of-sight velocity data were initially analyzed (Schou, 1999) in 74 time series of length 72 days, beginning 1 May 1996 00:00:00_TAI. The last data point used was at 12 April 2001 23:20:00_TAI. In late June 1998, however, contact with SOHO was lost, re-

This has been corrected to 2011.

In Section 3.3 it was stated that we use $\Delta m = m - m'$ in the range ± 15:

that may have appreciable amplitudes within the fitting window. For this work we have used $\Delta\ell = \ell - \ell'$ in the range ± 6 and $\Delta m = m - m'$ in the range ± 15. Furthermore, we neglect leaks for $\Delta\ell + \Delta m$ odd or which are estimated to be far away in frequency. Since the modes

A code inspection has revealed that a parameter was not set correctly and that a range of ± 10 was used.

In Equation 26 we gave integration limits of 0 to 1:

$$\sum_{n\ell}\left[\frac{1}{\sigma_1(n,\ell)}\left(\int_0^1 K_{n\ell}(r)\bar{\Omega}(r)\,\mathrm{d}r - a_1(n,\ell)\right)\right]^2 + \mu\int_0^1\left(\frac{\mathrm{d}^2\bar{\Omega}}{\mathrm{d}r^2}\right)^2\mathrm{d}r, \qquad (26)$$

where $\bar{\Omega}$ is the inferred rotation rate, the $K_{n\ell}$ are known kernels calculated from the mode eigenfunctions that relate the rotation rate to a_1, σ_1 is the standard error on a_1, r is fractional radius, and μ is the trade-off parameter that controls the relative importance of the two terms.

The upper integration limit has been changed to $r_{\max}$ (which is slightly larger than 1.0) and the associated text has been updated.

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Equation 28 also used this integration limit and did not include weighting terms:

$$\sum_{n\ell s}\left[\frac{1}{\sigma_{2s+1}(n,\ell)}\left(\int_0^1\int_0^\pi K_{n\ell s}(r,\theta)\bar{\Omega}(r,\theta)\,\mathrm{d}r\,\mathrm{d}\theta - a_{2s+1}(n,\ell)\right)\right]^2 + \mu_r\int_0^1\left(\frac{\mathrm{d}^2\bar{\Omega}}{\mathrm{d}r^2}\right)^2\mathrm{d}r + \mu_\theta\int_0^\pi\left(\frac{\mathrm{d}^2\bar{\Omega}}{\mathrm{d}\theta^2}\right)^2\mathrm{d}\theta \tag{28}$$

in perfect analogy with Equation (26) (Schou, Christensen-Dalsgaard, and Thompson, 1994). We formed common mode sets and averaged them using the same method described

A code inspection has revealed that the default regularization used by the inversion code includes weighting terms of r for the first term and r^{-4} for the second. This has been corrected, the equation has been reformatted to correct the integrals, and the associated text updated.

With these changes the relevant parts of the analysis performed in Article I are now correctly described.

We note that Article II (Larson and Schou, 2018) refers back to Article I and that the same inaccuracies are thus indirectly present there.

Finally we wish to call the reader's attention to the fact that a small fraction of the fitted modes appear to be affected by a systematic error during the times when MDI had a low duty cycle (A. Kosovichev and K. Mandal, private communication, 2019, 2023). In particular, the series with starting days of 3952, 4096, 4168, and 4240 show apparent artifacts for a number of modes within about 300 μHz of 3500 μHz for $\ell \geq 30$. The problem appears to be due to an unusual gap structure that is not being filled correctly. As the exact cause is not understood, caution is warranted for all modes in any timeseries where the gap-filling results in a substantially increased duty cycle (see Table 1 of Article I), which also includes the series starting on day 6472.

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Declarations

Competing Interests The authors declare no competing interests.

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Larson, T.P., Schou, J.: 2015, Improved helioseismic analysis of medium-ℓ data from the Michelson Doppler Imager (Article I). *Solar Phys.* **290**, 3221. DOI. ADS.

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