Mean Field Correction for WSO based on SOLIS

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Compare SOLIS and WSO Mean Fields Before the 2017 Glitch

SOLIS = 1.86 WSO
WSO = 0.538 SOLIS \((=1/1.86)\)

WSO = 0.4625 SOLIS
SOLIS = 2.16 WSO \((=1/0.4625)\)

Average

WSO = 0.50 SOLIS
SOLIS = 2.00 WSO \((=1/0.50)\)
Compare SOLIS and WSO Mean Fields After the 2017 Glitch

SOLIS = 1.6164 WSO
WSO = 0.619 SOLIS \( (=1/1.6164) \)

WSO = 0.521 SOLIS
SOLIS = 1.919 WSO \( (=1/0.521) \)

Average

WSO = 0.57 SOLIS
SOLIS = 1.76 WSO \( (=1/0.57) \)
Compare SOLIS and WSO Mean Fields Outside the 2017 Glitch

SOLIS = 1.825 WSO
WSO = 0.548 SOLIS \( (=1/1.825) \)

WSO = 0.4672 SOLIS
SOLIS = 2.14 WSO \( (=1/0.4672) \)

Average

WSO = 0.51 SOLIS
SOLIS = 1.97 WSO \( (=1/0.51) \)
# Conversion Factors w/o Glitch

<table>
<thead>
<tr>
<th>SOLIS =&gt; WSO</th>
<th>WSO =&gt; SOLIS</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.50</td>
<td>2.00</td>
<td>Before</td>
</tr>
<tr>
<td>0.57</td>
<td>1.76</td>
<td>After</td>
</tr>
<tr>
<td>0.51</td>
<td>1.97</td>
<td>Outside</td>
</tr>
<tr>
<td>0.53</td>
<td>1.91</td>
<td>Adopted (mean)</td>
</tr>
</tbody>
</table>

This is the intrinsic conversion factor WSO => SOLIS
Compare SOLIS and WSO Mean Fields During the 2017 Glitch

SOLIS = 2.5622 WSO
WSO = 0.390 SOLIS \( (=1/2.5622) \)

WSO = 0.2351 SOLIS
SOLIS = 4.254 WSO \( (=1/0.2351) \)

Average

WSO = 0.303 SOLIS
SOLIS = 3.303 WSO \( (=1/0.303) \)
The Magnitude of the Glitch

<table>
<thead>
<tr>
<th>SOLIS =&gt; WSO</th>
<th>WSO =&gt; SOLIS</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.30</td>
<td>3.30</td>
<td>During Glitch</td>
</tr>
<tr>
<td>0.51</td>
<td>1.91</td>
<td>No Glitch</td>
</tr>
<tr>
<td>1.70</td>
<td>1.73</td>
<td>Ratio</td>
</tr>
</tbody>
</table>

So, I adopt the correction factor for the mean field to be $1.73 \pm 0.16$ (95%) with the error being mostly determined by the spread of the points during the glitch on slide 3 (run a standard regression on the points). WSO mean fields should then be multiplied by the constant 1.73.

The starting time of the glitch seems to be somewhere between Dec 6 and Dec 16, 2016. Say, Dec 10, 2016 without loss of ‘reality’. Ending time May 18, 2017.