ERRATUM

Volume **150,** Number 1 (2001), in article "Enhanced Sensitivity in RIACT/MQ-MAS NMR Experiments Using Rotor Assisted Population Transfer," by H.-T. Kwak, S. Prasad, Z. Yao, P. J. Grandinetti, J. R. Sachleben, and L. Emsley, pages 71–80 (doi: 10.1006/jmre.2001.2313): On page 78, the equations in Appendix A.2.1 should read

$$
\begin{aligned}
\mathbf{V}^\dagger \mathbf{I}_\pm^{1-4} \mathbf{V} =\ & -\mathbf{I}_z^{1-4} \cos^2 \xi^{2-4} + \mathbf{I}_z^{2-3} \sin^2 \xi^{1-3} + \mathbf{I}_z^{1-2}(\cos^2 \xi^{2-4} - \cos^2 \xi^{1-3}) \\
& - \mathbf{I}_x^{1-3} \cos \xi^{1-3} \sin \xi^{1-3} - \mathbf{I}_x^{2-4} \cos \xi^{2-4} \sin \xi^{2-4} \pm i\mathbf{I}_y^{1-4} \cos \xi^{1-3} \cos \xi^{2-4} \\
& \mp i\mathbf{I}_y^{1-2} \cos \xi^{1-3} \sin \xi^{2-4} \pm i\mathbf{I}_y^{3-4} \sin \xi^{1-3} \cos \xi^{2-4} \pm i\mathbf{I}_y^{2-3} \sin \xi^{1-3} \sin \xi^{2-4}
\end{aligned}
$$

$$
\begin{aligned}
\mathbf{V}^\dagger \mathbf{I}_\pm^{2-3} \mathbf{V} =\ & \mathbf{I}_z^{2-3} \cos^2 \xi^{2-4} - \mathbf{I}_z^{1-4} \sin^2 \xi^{1-3} + \mathbf{I}_z^{3-4}(\cos^2 \xi^{2-4} - \cos^2 \xi^{1-3}) \\
& + \mathbf{I}_x^{1-3} \cos \xi^{1-3} \sin \xi^{1-3} + \mathbf{I}_x^{2-4} \cos \xi^{2-4} \sin \xi^{2-4} \pm i\mathbf{I}_y^{2-3} \cos \xi^{1-3} \cos \xi^{2-4} \\
& \pm i\mathbf{I}_y^{1-2} \sin \xi^{1-3} \cos \xi^{2-4} \mp i\mathbf{I}_y^{3-4} \cos \xi^{1-3} \sin \xi^{2-4} \pm i\mathbf{I}_y^{1-4} \sin \xi^{1-3} \sin \xi^{2-4}
\end{aligned}
$$

$$
\begin{aligned}
\mathbf{V}^\dagger \mathbf{I}_z^{1-4} \mathbf{V} =\ & \mathbf{I}_x^{1-4} \cos \xi^{1-3} \cos \xi^{2-4} - \mathbf{I}_x^{2-3} \sin \xi^{1-3} \sin \xi^{2-4} \\
& - \mathbf{I}_x^{1-2} \cos \xi^{1-3} \sin \xi^{2-4} + \mathbf{I}_x^{3-4} \sin \xi^{1-3} \cos \xi^{2-4}
\end{aligned}
$$

$$
\begin{aligned}
\mathbf{V}^\dagger \mathbf{I}_z^{2-3} \mathbf{V} =\ & -\mathbf{I}_x^{2-3} \cos \xi^{1-3} \cos \xi^{2-4} + \mathbf{I}_x^{1-4} \sin \xi^{1-3} \sin \xi^{2-4} \\
& + \mathbf{I}_x^{1-2} \sin \xi^{1-3} \cos \xi^{2-4} - \mathbf{I}_x^{3-4} \cos \xi^{1-3} \sin \xi^{2-4}
\end{aligned}
$$

instead of

$$
\begin{aligned}
\mathbf{V}^\dagger \mathbf{I}_\pm^{1-4} \mathbf{V} =\ & \frac{1}{2}(\mathbf{I}_\pm^{1-4} - \mathbf{I}_\mp^{1-4}) \cos \xi^{2-4} \cos \xi^{1-3} + \frac{1}{2}(\mathbf{I}_\pm^{2-3} - \mathbf{I}_\mp^{2-3}) \sin \xi^{2-4} \sin \xi^{1-3} \\
& - \frac{1}{2}(\mathbf{I}_\pm^{1-2} - \mathbf{I}_\mp^{1-2}) \sin \xi^{2-4} \cos \xi^{1-3} + \frac{1}{2}(\mathbf{I}_\pm^{3-4} - \mathbf{I}_\mp^{3-4}) \cos \xi^{2-4} \sin \xi^{1-3} \\
& - \frac{1}{2}\mathbf{I}_x^{2-4} \sin 2\xi^{2-4} - \frac{1}{2}\mathbf{I}_x^{1-3} \sin 2\xi^{1-3} - \mathbf{I}_z^{1-4} \cos^2 \xi^{1-3} \cos^2 \xi^{2-4} \\
& + \mathbf{I}_z^{2-3} \sin^2 \xi^{1-3} \sin^2 \xi^{2-4} - \mathbf{I}_z^{1-2} \cos^2 \xi^{1-3} \sin^2 \xi^{2-4} - \mathbf{I}_z^{3-4} \sin^2 \xi^{1-3} \cos^2 \xi^{2-4}
\end{aligned}
$$

$$
\begin{aligned}
\mathbf{V}^\dagger \mathbf{I}_\pm^{2-3} \mathbf{V} =\ & \frac{1}{2}(\mathbf{I}_\pm^{1-4} - \mathbf{I}_\mp^{1-4}) \sin \xi^{2-4} \sin \xi^{1-3} + \frac{1}{2}(\mathbf{I}_\pm^{2-3} - \mathbf{I}_\mp^{2-3}) \cos \xi^{2-4} \cos \xi^{1-3} \\
& + \frac{1}{2}(\mathbf{I}_\pm^{1-2} + \mathbf{I}_\mp^{1-2}) \cos \xi^{2-4} \sin \xi^{1-3} - \frac{1}{2}(\mathbf{I}_\pm^{3-4} - \mathbf{I}_\mp^{3-4}) \sin \xi^{2-4} \cos \xi^{1-3} \\
& + \frac{1}{2}\mathbf{I}_x^{2-4} \sin 2\xi^{2-4} + \frac{1}{2}\mathbf{I}_x^{1-3} \sin 2\xi^{1-3} + \mathbf{I}_z^{2-3} \cos^2 \xi^{1-3} \cos^2 \xi^{2-4} \\
& - \mathbf{I}_z^{1-4} \sin^2 \xi^{1-3} \sin^2 \xi^{2-4} - \mathbf{I}_z^{1-2} \sin^2 \xi^{1-3} \cos^2 \xi^{2-4} - \mathbf{I}_z^{3-4} \cos^2 \xi^{1-3} \sin^2 \xi^{2-4}
\end{aligned}
$$

$$
\begin{aligned}
\mathbf{V}^\dagger \mathbf{I}_z^{2-3} \mathbf{V} =\ & -\frac{1}{2}(\mathbf{I}_+^{2-3} + \mathbf{I}_-^{2-3}) \cos \xi^{2-4} \cos \xi^{1-3} + \frac{1}{2}(\mathbf{I}_+^{1-4} + \mathbf{I}_-^{1-4}) \sin \xi^{2-4} \sin \xi^{1-3} \\
& + \frac{1}{2}(\mathbf{I}_+^{1-2} + \mathbf{I}_-^{1-2}) \cos \xi^{2-4} \sin \xi^{1-3} - \frac{1}{2}(\mathbf{I}_+^{3-4} + \mathbf{I}_-^{3-4}) \sin \xi^{2-4} \cos \xi^{1-3}
\end{aligned}
$$

$$\mathbf{V}^{\dagger}\mathbf{I}_{z}^{1-4}\mathbf{V} = \frac{1}{2}(\mathbf{I}_{+}^{1-4}+\mathbf{I}_{-}^{1-4})\cos\xi^{2-4}\cos\xi^{1-3} - \frac{1}{2}(\mathbf{I}_{+}^{2-3}+\mathbf{I}_{-}^{2-3})\sin\xi^{2-4}\sin\xi^{1-3}$$

$$- \frac{1}{2}(\mathbf{I}_{+}^{1-2}+\mathbf{I}_{-}^{1-2})\cos\xi^{2-4}\sin\xi^{1-3} + \frac{1}{2}(\mathbf{I}_{+}^{3-4}+\mathbf{I}_{-}^{3-4})\sin\xi^{2-4}\cos\xi^{1-3}.$$

On pages 78 and 79, the equations in Appendix A.2.2 should read:

$$\mathbf{V}\mathbf{I}_{\pm}^{2-3}\mathbf{V}^{\dagger} = -\left(\mathbf{I}_{z}^{2-3}\mp i\mathbf{I}_{y}^{2-3}\right)\cos\xi^{1-3}\cos\xi^{2-4} - \left(\mathbf{I}_{z}^{1-4}\mp i\mathbf{I}_{y}^{1-4}\right)\sin\xi^{1-3}\sin\xi^{2-4}$$

$$+ \frac{1}{2}(\mathbf{I}_{\pm}^{1-2}-\mathbf{I}_{\mp}^{3-4})\cos\xi^{1-3}\sin\xi^{2-4} - \frac{1}{2}(\mathbf{I}_{\pm}^{1-3}-\mathbf{I}_{\mp}^{2-4})\cos\xi^{1-3}\sin\xi^{2-4}$$

$$+ \frac{1}{2}(\mathbf{I}_{\mp}^{1-2}-\mathbf{I}_{\pm}^{3-4})\sin\xi^{1-3}\cos\xi^{2-4} + \frac{1}{2}(\mathbf{I}_{\pm}^{1-3}-\mathbf{I}_{\pm}^{2-4})\sin\xi^{1-3}\cos\xi^{2-4}$$

$$\mathbf{V}\mathbf{I}_{z}^{2-3}\mathbf{V}^{\dagger} = \mathbf{I}_{x}^{1-4} + \frac{1}{2}\left(\mathbf{I}_{x}^{2-3}-\mathbf{I}_{x}^{1-4}\right)(\cos^{2}\xi^{1-3}+\cos^{2}\xi^{2-4})$$

$$+ \frac{1}{2}\left(\mathbf{I}_{x}^{1-2}+\mathbf{I}_{x}^{3-4}\right)\cos\xi^{1-3}\sin\xi^{1-3} - \frac{1}{2}\left(\mathbf{I}_{x}^{1-2}+\mathbf{I}_{x}^{3-4}\right)\cos\xi^{2-4}\sin\xi^{2-4}$$

$$+ \frac{1}{2}\left(\mathbf{I}_{z}^{1-2}-\mathbf{I}_{z}^{3-4}\right)(\cos^{2}\xi^{1-3}-\cos^{2}\xi^{2-4}) - \frac{1}{2}\left(\mathbf{I}_{x}^{1-3}+\mathbf{I}_{x}^{2-4}\right)\cos\xi^{1-3}\sin\xi^{1-3}$$

$$- \frac{1}{2}\left(\mathbf{I}_{x}^{1-3}+\mathbf{I}_{x}^{2-4}\right)\cos\xi^{2-4}\sin\xi^{2-4}$$

$$\mathbf{V}\mathbf{I}_{\pm}^{1-4}\mathbf{V}^{\dagger} = (\mathbf{I}_{z}^{1-4}\pm i\mathbf{I}_{y}^{1-4})\cos\xi^{1-3}\cos\xi^{2-4} + \left(\mathbf{I}_{z}^{2-3}\pm i\mathbf{I}_{y}^{2-3}\right)\sin\xi^{1-3}\sin\xi^{2-4}$$

$$+ \frac{1}{2}(\mathbf{I}_{\pm}^{1-2}-\mathbf{I}_{\mp}^{3-4})\cos\xi^{1-3}\sin\xi^{2-4} + \frac{1}{2}(\mathbf{I}_{\pm}^{1-3}-\mathbf{I}_{\mp}^{2-4})\cos\xi^{1-3}\sin\xi^{2-4}$$

$$+ \frac{1}{2}(\mathbf{I}_{\mp}^{1-2}-\mathbf{I}_{\pm}^{3-4})\sin\xi^{1-3}\cos\xi^{2-4} - \frac{1}{2}(\mathbf{I}_{\mp}^{1-3}-\mathbf{I}_{\mp}^{2-4})\sin\xi^{1-3}\cos\xi^{2-4}$$

$$\mathbf{V}\mathbf{I}_{z}^{1-4}\mathbf{V}^{\dagger} = -\mathbf{I}_{x}^{2-3} - \frac{1}{2}\left(\mathbf{I}_{x}^{1-4}-\mathbf{I}_{x}^{2-3}\right)(\cos^{2}\xi^{1-3}+\cos^{2}\xi^{2-4})$$

$$+ \frac{1}{2}\left(\mathbf{I}_{x}^{1-2}+\mathbf{I}_{x}^{3-4}\right)\cos\xi^{1-3}\sin\xi^{1-3} - \frac{1}{2}\left(\mathbf{I}_{x}^{1-2}+\mathbf{I}_{x}^{3-4}\right)\cos\xi^{2-4}\sin\xi^{2-4}$$

$$+ \frac{1}{2}\left(\mathbf{I}_{z}^{1-2}-\mathbf{I}_{z}^{3-4}\right)(\cos^{2}\xi^{1-3}-\cos^{2}\xi^{2-4}) - \frac{1}{2}\left(\mathbf{I}_{x}^{1-3}+\mathbf{I}_{x}^{2-4}\right)\cos\xi^{1-3}\sin\xi^{1-3}$$

$$- \frac{1}{2}\left(\mathbf{I}_{x}^{1-3}+\mathbf{I}_{x}^{2-4}\right)\cos\xi^{2-4}\sin\xi^{2-4}$$

instead of

$$\mathbf{V}\mathbf{I}_{+}^{2-3}\mathbf{V}^{\dagger} = \frac{1}{2}(\mathbf{I}_{+}^{2-3}-\mathbf{I}_{-}^{2-3})\cos\xi^{1-3}\cos\xi^{2-4} - \mathbf{I}_{z}^{2-3}\cos\xi^{1-3}\cos\xi^{2-4}$$

$$+ \frac{1}{2}(\mathbf{I}_{+}^{1-4}-\mathbf{I}_{-}^{1-4})\sin\xi^{1-3}\sin\xi^{2-4} - \mathbf{I}_{z}^{1-4}\sin\xi^{1-3}\sin\xi^{2-4}$$

$$+ \frac{1}{2}(\mathbf{I}_{+}^{1-2}\cos\xi^{1-3}\sin\xi^{2-4}+\mathbf{I}_{-}^{1-2}\sin\xi^{1-3}\cos\xi^{2-4})$$

$$- \frac{1}{2}(\mathbf{I}_{+}^{3-4}\sin\xi^{1-3}\cos\xi^{2-4}+\mathbf{I}_{-}^{3-4}\cos\xi^{1-3}\sin\xi^{2-4})$$

$$- \frac{1}{2}(\mathbf{I}_{+}^{2-4}\sin\xi^{1-3}\cos\xi^{2-4}-\mathbf{I}_{-}^{2-4}\cos\xi^{1-3}\sin\xi^{2-4})$$

$$- \frac{1}{2}(\mathbf{I}_{+}^{1-3}-\cos\xi^{1-3}\sin\xi^{2-4}-\mathbf{I}_{-}^{1-3}\sin\xi^{1-3}\cos\xi^{2-4})$$

$$\mathbf{V}\mathbf{I}_-^{2-3}\mathbf{V}^\dagger = -\frac{1}{2}(\mathbf{I}_+^{2-3} - \mathbf{I}_-^{2-3})\cos\xi^{1-3}\cos\xi^{2-4} - \mathbf{I}_z^{2-3}\cos\xi^{1-3}\cos\xi^{2-4}$$

$$-\frac{1}{2}(\mathbf{I}_+^{1-4} - \mathbf{I}_-^{1-4})\sin\xi^{1-3}\sin\xi^{2-4} - \mathbf{I}_z^{1-4}\sin\xi^{1-3}\sin\xi^{2-4}$$

$$+\frac{1}{2}(\mathbf{I}_+^{1-2}\sin\xi^{1-3}\cos\xi^{2-4} + \mathbf{I}_-^{1-2}\cos\xi^{1-3}\sin\xi^{2-4}) - \frac{1}{2}(\mathbf{I}_+^{3-4}\cos\xi^{1-3}\sin\xi^{2-4}$$

$$+\mathbf{I}_-^{3-4}\sin\xi^{1-3}\cos\xi^{2-4}) + \frac{1}{2}(\mathbf{I}_+^{2-4}\cos\xi^{1-3}\sin\xi^{2-4} - \mathbf{I}_-^{2-4}\sin\xi^{1-3}\cos\xi^{2-4})$$

$$+\frac{1}{2}(\mathbf{I}_+^{1-3}\sin\xi^{1-3}\cos\xi^{2-4} - \mathbf{I}_-^{1-3}\cos\xi^{1-3}\sin\xi^{2-4})$$

$$\mathbf{V}\mathbf{I}_z^{2-3}\mathbf{V}^\dagger = \frac{1}{4}(\mathbf{I}_+^{2-3} + \mathbf{I}_-^{2-3})(\cos^2\xi^{1-3} + \cos^2\xi^{2-4}) + \frac{1}{2}\mathbf{E}^{2-3}(\cos^2\xi^{2-4} - \cos^2\xi^{1-3})$$

$$+\frac{1}{4}(\mathbf{I}_+^{1-4} + \mathbf{I}_-^{1-4})(\sin^2\xi^{1-3} + \sin^2\xi^{2-4}) + \mathbf{E}^{1-4}(\sin^2\xi^{2-4} - \sin^2\xi^{1-3})$$

$$+\frac{1}{4}(\mathbf{I}_+^{1-2} + \mathbf{I}_-^{1-2})(\cos\xi^{1-3}\sin\xi^{1-3} - \cos\xi^{2-4}\sin\xi^{2-4})$$

$$+\frac{1}{4}\mathbf{I}_+^{3-4} + \mathbf{I}_-^{3-4})(\cos\xi^{1-3}\sin\xi^{1-3} - \cos\xi^{2-4}\sin\xi^{2-4})$$

$$-\frac{1}{4}(\mathbf{I}_+^{2-4} + \mathbf{I}_-^{2-4})(\cos\xi^{1-3}\sin\xi^{1-3} + \cos\xi^{2-4}\sin\xi^{2-4})$$

$$-\frac{1}{4}(\mathbf{I}_+^{1-3} + \mathbf{I}_-^{1-3})(\cos\xi^{1-3}\sin\xi^{1-3} + \cos\xi^{2-4}\sin\xi^{2-4})$$

$$\mathbf{V}\mathbf{I}_+^{1-4}\mathbf{V}^\dagger = \frac{1}{2}(\mathbf{I}_+^{1-4} - \mathbf{I}_-^{1-4})\cos\xi^{1-3}\cos\xi^{2-4} + \mathbf{I}_z^{1-4}\cos\xi^{1-3}\cos\xi^{2-4}$$

$$+\frac{1}{2}(\mathbf{I}_+^{2-3} - \mathbf{I}_-^{2-3})\sin\xi^{1-3}\sin\xi^{2-4} + \mathbf{I}_z^{2-3}\sin\xi^{1-3}\sin\xi^{2-4}$$

$$+\frac{1}{2}(\mathbf{I}_+^{1-2}\cos\xi^{1-3}\sin\xi^{2-4} + \mathbf{I}_-^{1-2}\sin\xi^{1-3}\cos\xi^{2-4}) - \frac{1}{2}(\mathbf{I}_+^{3-4}\sin\xi^{1-3}\cos\xi^{2-4}$$

$$+\mathbf{I}_-^{3-4}\cos\xi^{1-3}\sin\xi^{2-4}) + \frac{1}{2}(\mathbf{I}_+^{2-4}\sin\xi^{1-3}\cos\xi^{2-4} - \mathbf{I}_-^{2-4}\cos\xi^{1-3}\sin\xi^{2-4})$$

$$+\frac{1}{2}(\mathbf{I}_+^{1-3}\cos\xi^{1-3}\sin\xi^{2-4} - \mathbf{I}_-^{1-3}\sin\xi^{1-3}\cos\xi^{2-4})$$

$$\mathbf{V}\mathbf{I}_-^{1-4}\mathbf{V}^\dagger = -\frac{1}{2}(\mathbf{I}_+^{1-4} - \mathbf{I}_-^{1-4})\cos\xi^{1-3}\cos\xi^{2-4} + \mathbf{I}_z^{1-4}\cos\xi^{1-3}\cos\xi^{2-4}$$

$$-\frac{1}{2}(\mathbf{I}_+^{2-3} - \mathbf{I}_-^{2-3})\sin\xi^{1-3}\sin\xi^{2-4} + \mathbf{I}_z^{2-3}\sin\xi^{1-3}\sin\xi^{2-4}$$

$$+\frac{1}{2}(\mathbf{I}_+^{1-2}\sin\xi^{1-3}\cos\xi^{2-4} + \mathbf{I}_-^{1-2}\cos\xi^{1-3}\sin\xi^{2-4}) - \frac{1}{2}(\mathbf{I}_+^{3-4}\cos\xi^{1-3}\sin\xi^{2-4}$$

$$+\mathbf{I}_-^{3-4}\sin\xi^{1-3}\cos\xi^{2-4}) - \frac{1}{2}(\mathbf{I}_+^{2-4}\cos\xi^{1-3}\sin\xi^{2-4} - \mathbf{I}_-^{2-4}\sin\xi^{1-3}\cos\xi^{2-4})$$

$$-\frac{1}{2}(\mathbf{I}_+^{1-3}\sin\xi^{1-3}\cos\xi^{2-4} - \mathbf{I}_-^{1-3}\cos\xi^{1-3}\sin\xi^{2-4})$$

$$\mathbf{V}\mathbf{I}_z^{1-4}\mathbf{V}^\dagger = -\frac{1}{4}(\mathbf{I}_+^{1-4} + \mathbf{I}_-^{1-4})(\cos^2\xi^{1-3} + \cos^2\xi^{2-4}) - \frac{1}{2}\mathbf{E}^{1-4}(\cos^2\xi^{2-4} - \cos^2\xi^{1-3})$$

$$-\frac{1}{4}(\mathbf{I}_+^{2-3} + \mathbf{I}_-^{2-3})(\sin^2\xi^{1-3} + \sin^2\xi^{2-4}) - \mathbf{E}^{2-3}(\sin^2\xi^{2-4} - \sin^2\xi^{1-3})$$

$$+ \frac{1}{4}(\mathbf{I}_+^{1-2} + \mathbf{I}_-^{1-2})(\cos \xi^{1-3} \sin \xi^{1-3} - \cos \xi^{2-4} \sin \xi^{2-4})$$

$$+ \frac{1}{4}(\mathbf{I}_+^{3-4} + \mathbf{I}_-^{3-4})(\cos \xi^{1-3} \sin \xi^{1-3} - \cos \xi^{2-4} \sin \xi^{2-4})$$

$$- \frac{1}{4}(\mathbf{I}_+^{2-4} + \mathbf{I}_-^{2-4})(\cos \xi^{1-3} \sin \xi^{1-3} + \cos \xi^{2-4} \sin \xi^{2-4})$$

$$- \frac{1}{4}(\mathbf{I}_+^{1-3} + \mathbf{I}_-^{1-3})(\cos \xi^{1-3} \sin \xi^{1-3} + \cos \xi^{2-4} \sin \xi^{2-4}).$$

The corrections do not change the conclusions of the paper.