Correction Sheet for the paper entitled “Simple analytical and graphical methods for PWM-VSI drives,” IEEE Trans. on PE, January 1999.

Equations (21), (22), and (23) have scaling errors. However, all the graphs shown in the paper that relate to these equations are correct and need no modification.

The correct form of the equations is as follows:

$$l_{11}^2 = M_i^2 \times (\frac{1}{3} + d_0^2 + d_1^2 - d_0 - d_1 + 2d_0 d_1) \quad (21)$$

$$l_{12}^2 = \frac{p^2}{18} \times [\frac{1}{3}(2d_1^3 - 4d_2^3 - 4d_1^4 + 2d_2^4 + 7d_1 d_2^3 - 2d_2 d_1^3) + d_1^2 d_2^2] \quad (22)$$

$$l_{12}^2 = \frac{p^2}{18} \times [-d_1 d_2^2 + d_0 (d_1 d_2^2 - 2d_1^3 + 2d_2^3 - d_1^2 d_2)] \quad (23)$$

The definitions of (21), (22), and (23) were obtained by splitting the integral function (20) into components (during analytical derivations) without recognizing some of the results could possibly turn out a negative number and render the left side variable definitions with “square” function rather counter-intuitive.
For this purpose, it may be better to either recognize the left side of the equations as variable name, rather than its square, or else re-define all equations in the following simple way:

$$l_{1rms}^2 = \int_0^1 l_1^2 dd = A + B + C \quad (20)$$

where A, B, and C, are as follows:

$$A = M_i^2 \times (\frac{1}{3} + d_0^2 + d_1^2 - d_0 - d_1 + 2d_0 d_1) \quad (21)$$

$$B = \frac{p^2}{18} \times [\frac{1}{3}(2d_1^3 - 4d_2^3 - 4d_1^4 + 2d_2^4 + 7d_1 d_2^3 - 2d_2 d_1^3) + d_1^2 d_2^2] \quad (22)$$

$$C = \frac{p^2}{18} \times [-d_1 d_2^2 + d_0 (d_1 d_2^2 - 2d_1^3 + 2d_2^3 - d_1^2 d_2)] \quad (23)$$