

**Erratum to ‘Y. Akama, S. Berardi, S. Hayashi, U. Kohlenbach: An
arithmetical hierarchy of the law of excluded middle and related
principles. LICS 2004.’
September 12, 2020**

As was recently pointed out in [1], there is an oversight in the proof of Theorem 2.7 and, in fact, part (ii) of this theorem (while correct for formulas not containing \vee) needs to have a restricted double-negation-shift principle U_k -DNS added to the verifying theory which e.g. follows from $\neg\neg(\Pi_k^0 \vee \Pi_k^0)$ -DNE (see [2] for a detailed study of such principles). This has no consequences for the rest of the paper (in particular Corollaries 2.8,2.9 remain valid) but leaves open the possibility that E_k -DNE might be strictly stronger than Σ_k^0 -DNE. In any case, E_k -DNE has the same relation to all other principles in Figure 2 as Σ_k^0 -DNE has since it still follows from Σ_k^0 -LEM (which is equivalent to E_k -LEM by Corollary 2.9) while it does not imply Σ_k^0 -LLPO (Proof for $k = 1$: E_1 -DNE \subseteq Σ_1 -DNE+ U_1 -DNS has a direct (without negative translation) functional interpretation by bar-recursive functionals while Σ_1^0 -LLPO has not (since it has Π_3^0 -consequences without computable Skolem functions).

[1] M. Fujiwara, T. Kurahashi: Prenex normal form theorems in semi-classical arithmetic. arXiv:2009.03485v1, 2020.

[2] M. Fujiwara, U. Kohlenbach: Interrelation between weak fragments of double negation shift and related principles. J. Symb. Logic vol. 83, pp. 991-1012 (2018).