Erratum

Kummer, M.: On Resonant Non Linearly Coupled Oscillators with Two Equal Frequencies. Commun. math. Phys. **48**, 53—79 (1976)

The expression (3.5) (p. 63) is in general only correct if $n=2$. Accordingly, the remark at the bottom of p. 77 is invalid.

In order to give the correct expression for general n we write the expansion (3.14) in the form

$$F(\xi, \eta) = -\frac{1}{2}(A\xi^2 + B\eta^2) + \sum_{k=0}^3 B_{k3-k}\xi^k\eta^{3-k} \\ + \sum_{k=0}^4 C_{k4-k}\xi^k\eta^{4-k} + \mathcal{O}_5, \quad (3.14)$$

where $\mathcal{O}_5$ is a convergent power series in ξ, η beginning with a term of order five. If we use the notation

$$A_{113} = \frac{\partial^3 K^{(n)}}{\partial x^2 \partial z}(-e_3) \quad \text{etc.},$$

the coefficients in the expansion (3.14) are given by the following expressions

$$\left. \begin{aligned} B_{30} &= \frac{1}{2}A_{13} + \frac{1}{6}A_{111} & B_{03} &= \frac{1}{2}A_{23} + \frac{1}{6}A_{222} \\ B_{12} &= \frac{1}{2}(A_{13} + A_{122}) & B_{21} &= \frac{1}{2}(A_{23} + A_{112}) \\ C_{40} &= \frac{1}{8}(A - C) + \frac{1}{4}A_{113} + \frac{1}{24}A_{1111} \\ C_{04} &= \frac{1}{8}(B - C) + \frac{1}{4}A_{223} + \frac{1}{24}A_{2222} \\ C_{22} &= \frac{1}{8}(A + B - 2C) + \frac{1}{4}(A_{113} + A_{223} + A_{1122}) \end{aligned} \right\} \quad (*)$$

The expressions for the coefficients C_{13} and C_{31} have been omitted because they are not needed in the following.

The correct expression which for general n replaces (3.5) is

$$\frac{3}{2}A[4A^2B_{03}^2 + (B_{03}A + B_{21}B)^2] + \frac{3}{2}B[4B^2B_{30}^2 + (B_{30}B + B_{12}A)^2] \\ + AB(3C_{40}B^2 + C_{22}AB + 3C_{04}A^2). \quad (3.5')$$

Only if all A 's with three or four subscripts in the list (*) vanish, as is certainly the case for $n=2$, the expression (3.5') (after multiplication by a factor 8) simplifies to the expression (3.5)

Remark. The function $F(\xi, \eta)$ as defined in (2.28) differs from the function entering (3.10) [and (3.14)] by the additive constant $K^{(n)}(-e_3)$.