Four sets of ${ }_{3} F_{2}(1) s$, Hahn polynomials and recurrence relations for the $3-j$ coefficients

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## CORRIGENDUM

Four sets of ${ }_{3} F_{2}(1) s$, Hahn polynomials and recurrence relations for the $3-j$ coefficients V Rajeswari and K Srinivasa Rao 1989 J. Phys. A: Math. Gen. 22 4113-4123

The formulae (39) and (40) should read as follows:

$$
\begin{align*}
F\left(j_{p}, j_{q}, j_{r}\right)= & \left(j_{p}-j_{q}+j_{r}+1\right)\left(j_{p}-m_{p}+1\right)\left(-j_{p}+j_{q}+j_{r}\right) \\
& -2\left(j_{p}+1\right)\left(j_{q}-m_{q}\right)\left(j_{p}-j_{q}+m_{r}\right) \tag{39}
\end{align*}
$$

and

$$
\begin{align*}
E\left(j_{p}, j_{q}, j_{r}\right)= & -\left(j_{p}+j_{q}-j_{r}\right)\left(j_{p}+m_{p}\right)\left(j_{p}+j_{q}+j_{r}+1\right) \\
& +2 j_{p}\left(j_{q}-m_{q}\right)\left(j_{p}+j_{q}-m_{r}+1\right) . \tag{40}
\end{align*}
$$

These corrections do not affect the condition (41) or any other result presented in the paper. Also, in (22) the first term in the square root should be $\left(2 j_{2}-n\right)$ ! instead of $\left(j_{2}-n\right)!$.

We are grateful to J Raynal for the following observation. The recurrence relations between neighbours derived by him (1979 J. Math. Phys. 202398 ) can be used to obtain (37) and (38). If $r_{0}, r_{1}, r_{2}, r_{3}, r_{4}$ and $r_{5}$ are the Whipple parameters for $\left(\begin{array}{l}j_{1} \\ m_{1}\end{array} \frac{j_{2}}{m_{2}} j_{m_{3}}\right)$, then the corresponding parameters for $\left(\begin{array}{cc}j_{1} \\ m_{1} & m_{2}^{\prime 2}+1\end{array} m_{3}^{j_{3}}\right)$ are $r_{0}+\frac{1}{3}, r_{1}-\frac{2}{3}, r_{2}+\frac{1}{3}, r_{3}+\frac{1}{3}, r_{4}-\frac{2}{3}$ and $r_{5}+\frac{1}{3}$ and those of $\left(\begin{array}{ccc}j_{1}+1 & j_{2} & j_{2} \\ m_{1} & m_{2} & m_{3}\end{array}\right)$ are $r_{0}, r_{1}+1, r_{2}, r_{3}, r_{4}-1$ and $r_{5}$. Since a contiguous $3-j$ symbol is obtained for four shifts of $\frac{1}{3}$ and two of $-\frac{2}{3}$ on the Whipple parameters, or four shifts of $-\frac{1}{3}$ and two shifts of $\frac{2}{3}$, one can choose in many ways a $3-j$ coefficient which has different neighbours. For example ( $\left(\begin{array}{ccc}j_{1}+1 / 2 \\ m_{1}-1 / 2 & j_{2}-1 / 2 & j_{3} \\ m_{2}+1 / 2\end{array}\right)$ can have in its recurrence relations either the neighbours: $\left(\begin{array}{ccc}j_{1} & j_{2} & j_{i_{1}} \\ m_{1} & m_{2} & m_{3}\end{array}\right),\left(\begin{array}{llll}y_{1} & j_{1} & j_{2} & j_{2} \\ m_{1} & m_{2}+1 & m_{3}-1\end{array}\right)$ or the neighbours: $\left(\begin{array}{lll}j_{1} & j_{2} & j_{3} \\ m_{1} & m_{2} & m_{3}\end{array}\right),\left(\begin{array}{ccc}j_{1}+1 & j_{2} & j_{3} \\ m_{1} & m_{2} & j_{3} \\ m_{3}\end{array}\right)$. From such a pair of recurrence relations, by eliminating the given $3-j$ coefficient, relations (37) and (38) can be derived.

