Comment on arXiv:1203.5868v1[math-ph]

25 July 2012 S.O.

Instead of $\mathfrak{t}^{(\text{ex})}$ (page 33), we should consider $\mathfrak{t}^{(\text{ex}')}$:

$$\mathfrak{t}^{(\text{ex}')}(\boldsymbol{\lambda}) \stackrel{\text{def}}{=} (\lambda_1, \lambda_1 + \lambda_3 - \lambda_4, \lambda_1 + \lambda_2 - \lambda_4, 2\lambda_1 - \lambda_4). \tag{1}$$

Then we have

$$B'^{\,\text{II}}(x;\boldsymbol{\lambda}) = D'^{\,\text{I}}\big(-\lambda_1 - x; \mathfrak{t}^{(\text{ex}')}(\boldsymbol{\lambda})\big), \quad D'^{\,\text{II}}(x;\boldsymbol{\lambda}) = B'^{\,\text{I}}\big(-\lambda_1 - x; \mathfrak{t}^{(\text{ex}')}(\boldsymbol{\lambda})\big), \tag{2}$$

and the type I and II multi-indexed (q-)Racah polynomials are related:

$$\check{P}^{\text{II}}_{\mathcal{D},n}(x;\boldsymbol{\lambda}) = \check{P}^{\text{I}}_{\mathcal{D},n}\big(-\lambda_1 - x; \mathfrak{t}^{(\text{ex}')}(\boldsymbol{\lambda})\big). \tag{3}$$