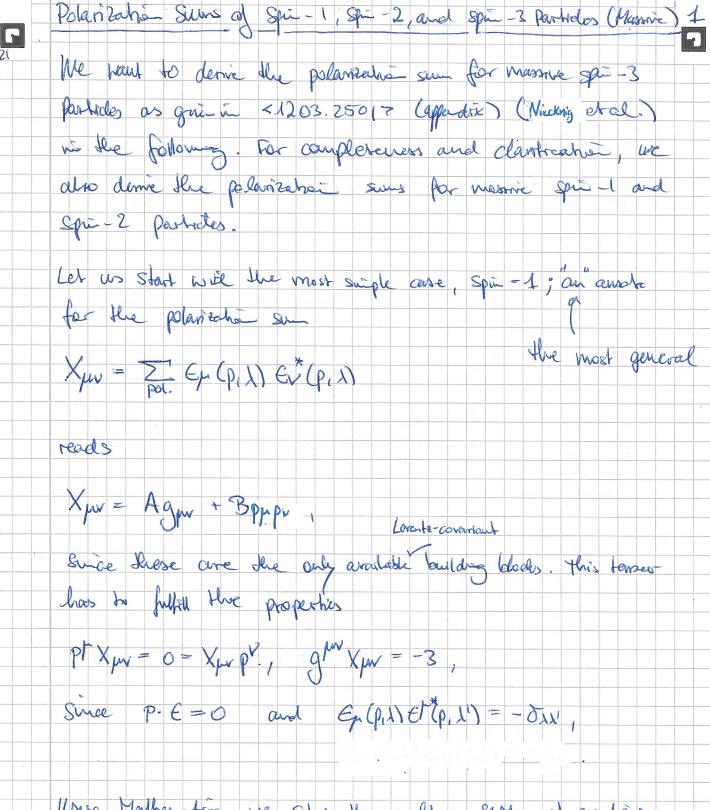
## Disclaimer

The notes at hand were written during my research period as a PhD student at the University of Bonn. They contain auxiliary calculations to and comments on publications by other authors, which are subject to definite conditions of use; see also the respective article(s) on <a href="https://arxiv.org/">https://arxiv.org/</a> linked on the following website. For more information and all my material, check: <a href="https://www.physics-and-stuff.com/">https://www.physics-and-stuff.com/</a>

## I raise no claim to correctness and completeness of the given material!

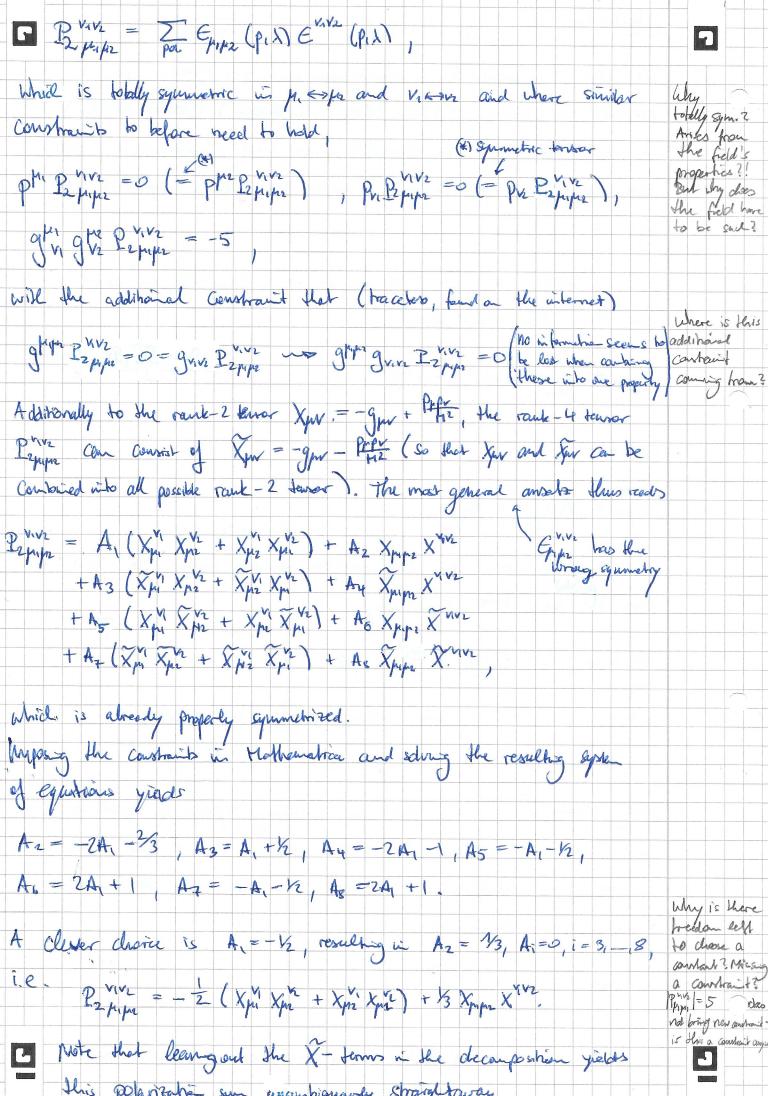
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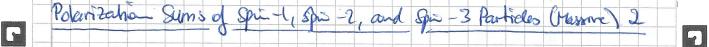


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 $\begin{array}{c} \text{ If Sing Mathematrice, we solve the resulting System of equations}\\ \text{ Why on-Snell and find <math>A = -1$ ,  $B = 1/1^2$ , where M is the mass endematries,  $p \ge 1/2$ ? Recame of the spin-1 particle, Here, we used ou-shell knicematrics 1/2 a particle is there, we used ou-shell knicematrics 1/2 a particle is 1/2, 1/2 and 1/2. The polarization such this reads 1/2 and 1/2 and

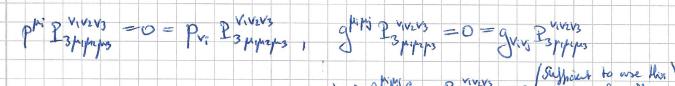
E For spin=2, the polaniahin weekers carry an additional index,

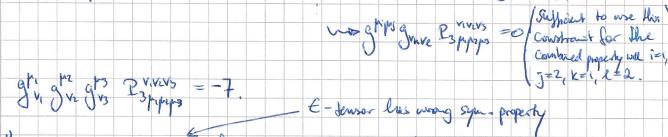




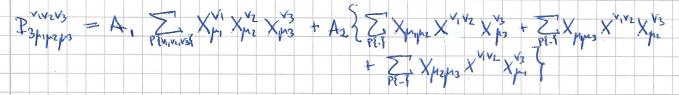
For Spin = 3, we will now be guided by the considerations from the paper; note that there, the particle is fixed to the someson. Sevice itoomance is described by a hotally symmetric ranke-3 tensor field Surx = Spin I' (I = 1), which is subject to the constraints

- It spor = 0, gthe spor = 0.
- We define the polarization sum as per
- P 112223 = 27 Epipezna (P.L) EVIVENA (P.L),
- Which is the subject to the constraits

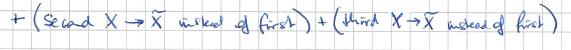


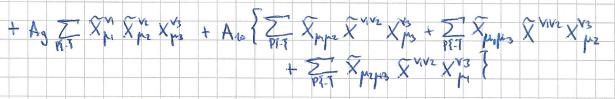


The most general ansatz for the polarization and then reads

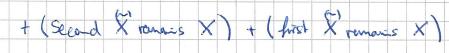


+ 
$$A_3 \sum_{71.7}^{7} X_{\mu_1} X_{\mu_2} X_{\mu_3}^{\nu_3} + A_4 \sum_{77.7}^{7} X_{\mu_1 \mu_2} X_{\mu_3}^{\nu_1 \nu_2} + \sum_{77.7}^{7} X_{\mu_1 \mu_2} X_{\mu_2}^{\nu_1 \nu_2} X_{\mu_1}^{\nu_1 \nu_2} X_{\mu_2}^{\nu_1 \nu_2} X_{\mu_1}^{\nu_1 \nu_2} X_{\mu_2}^{\nu_1 \nu_2} X_{\mu_1}^{\nu_2 \nu_2} X_{\mu_1}^{\nu_2 \nu_2} X_{\mu_1}^{\nu_1 \nu_2} X_{\mu_2}^{\nu_2 \nu_2} X_{\mu_1}^{\nu_2 \nu_2} X_{\mu_2}^{\nu_2 \nu_2} X_{\mu_1}^{\nu_2 \nu_2} X_{\mu_2}^{\nu_2 \nu_2} X_{\mu_1}^{\nu_2 \nu_2} X_{\mu_2}^{\nu_2 \nu_2} X_{\mu_2}^{\nu_2} X_{$$





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G

 $\square + A_{15} \sum_{p_{1.7}}^{1} \widetilde{X}_{\mu_{1}}^{\nu_{1}} \widetilde{X}_{\mu_{2}}^{\nu_{2}} \widetilde{X}_{\mu_{3}}^{\nu_{3}} + A_{10} \left\{ \sum_{p_{1.7}}^{1} \widetilde{X}_{\mu_{1}\mu_{2}}^{\nu_{2}} \widetilde{X}_{\mu_{2}\mu_{3}}^{\nu_{3}} + \sum_{p_{1.7}}^{1} \widetilde{X}_{\mu_{1}\mu_{3}}^{\nu_{2}} \widetilde{X}_{\mu_{2}\mu_{3}}^{\nu_{3}} + A_{10} \left\{ \sum_{p_{1.7}}^{1} \widetilde{X}_{\mu_{2}\mu_{3}}^{\nu_{2}} \widetilde{X}_{\mu_{2}}^{\nu_{3}} + \sum_{p_{1.7}}^{1} \widetilde{X}_{\mu_{1}\mu_{3}}^{\nu_{2}} \widetilde{X}_{\mu_{2}}^{\nu_{3}} \right\} = 1$ Unposing the apprementioned constraints in Mathanatica results in  $A_1 = \frac{16}{6}$ ,  $A_2 = -\frac{1}{30}$ ,  $A_1 = 0$ , i = 3, ..., 16. Hence,  $\frac{\text{Mence}}{2} = \frac{1}{6} \sum_{\substack{n=1\\ n \neq n}} \frac{1}{2} \times \frac{1}{n} \times \frac$  $= \frac{1}{6} \sum_{p_{1}v_{1}v_{2}v_{3}} \sum_{p_{2}} \frac{1}{2} \left( \chi_{p_{2}} \chi_{p_{3}} + \chi_{p_{3}} \chi_{p_{3}} + \chi_{p_{3}} \chi_{p_{3}} + \chi_{p_{3}} \chi_{p_{3}} \chi_{p_{3}} + \chi_{p_{3}} \chi_{p_{3}}$ 

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