Dirac fermions: [SARAH]

$$\chi = \begin{pmatrix} \chi_L \\ \chi_R^+ \end{pmatrix}, \quad \tilde{e} = \begin{pmatrix} e_L'' \\ e_R'^+ \end{pmatrix}, \quad \tilde{\nu} = \begin{pmatrix} \nu_L'' \\ \nu_R''^+ \end{pmatrix} \quad e' = \begin{pmatrix} e_L' \\ e_R''^+ \end{pmatrix}$$

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$$\mathcal{L} \supset c_L \bar{L}_R'' L_L' \Phi + h.c$$

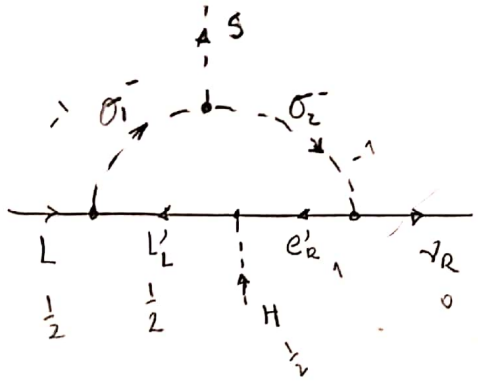
New solution N=6

N	Solution	x'	x''	ν	Z_3	Z_4	S^*	σ_1	σ_2
6	(1,-2,-3,5,5,6)	-1	-6	5	-3	2	5	+1	+6
6	(3,5,-12,17,17,-20)	-3	-20	17	-12	-5	17	...	

$U(1)_B$

$(L_L')^\dagger \to -x=1$

$L_R'' \to x''=-6$



$$\mathcal{L} \supset \bar{L} L_L' \sigma_1 + Y \bar{e}_R' \nu_R \sigma_2 + Y \sigma_1 \sigma_2^* S + h.c$$

c −1 +1 | +1 +5 (−6) | −1 −5 +6 | +1 −6 +5

$$\mathcal{L}^{SM} \supset \bar{L} H e_R + Y \bar{L}_L H e_R'$$

$-\frac{1}{2} - \frac{1}{2} + 1$

Lagrangiano Weltev.

$$\mathcal{L} \supset Y_1 \bar{L}' L \sigma_1^* + Y_2 \bar{e}_R' L^* H + Y_3 \bar{\nu}_R e_R' \sigma_2 + m_1 S^* \sigma_2^* \sigma_1 + m_{\sigma_1} \sigma_1^* \sigma_1 + m_{\sigma_2} \sigma_2^* \sigma_2$$

falta | falta | Y_{RE} | Y_{RF}

$$+ Y_\alpha \bar{L}_R'' e_L' H + Y_{\chi_S} \bar{\chi}_R \chi_L S + Y_{\chi\phi} \bar{\chi}_R \chi_L \Phi + \lambda_{L\phi} \bar{L}_R'' L_L' \Phi + \lambda_{e\phi} \bar{e}_R' e_L'' \phi^*$$

Y_{RG} | Y_{RA} | Y_{RA2} falta | Y_{RC2} falta | Y_{RB2} falta

$$+ \lambda_{LS} \bar{L}_R'' L_L S + \lambda_{eS} \bar{e}_R' e_L'' S^* + \dots \; h.c + V(\text{cuárticos})$$

Y_{RC} | Y_{RB}

falta → $\lambda \bar{L} L_R S + \lambda_{RF2} \Phi^* \sigma_2^* \sigma_1$

λ → Y_{RD} l·l·p·S