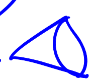
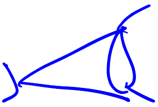
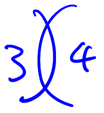
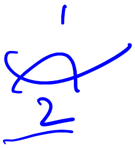
$\frac{1}{\psi^2}$  has problem when $A_3, A_4 \to 0$

large momenta correspond to small A_i's.

$\tilde{\Phi}($  $) =$ 

$\otimes$ 

subgraph cograph

$$\frac{1}{\psi^2} \ - \ \frac{1}{(A_3+A_4)^2}\,\frac{1}{(A_1+A_2)^2}$$

$$\int_0^\infty e^{-AQ}\,dA = \frac{1}{Q}$$

$$\int_{P} \Omega \left\{ \frac{1}{[\underbrace{(A_1+A_2)}_{\psi_{\Gamma/\gamma}}\underbrace{(A_3+A_4)}_{\psi_\gamma}+\underbrace{A_3A_4}_{R_\gamma}]^2} - \frac{1}{\underline{(A_3+A_4)^2}\,\underline{(A_1+A_2)^2}} \right.$$

$$\xrightarrow{3,4\to 0} \frac{1}{[(A_1+A_2)(A_3+A_4)]^2} - \frac{1}{\cdots}$$

Wonderful:

$$\psi_\Gamma = \psi_{\Gamma/\gamma}\,\psi_\gamma + R_\gamma$$

$$\Phi_\Gamma = \Phi_{\Gamma/\gamma}\,\psi_\gamma + \underbrace{\tilde{R}^\Gamma_\gamma}$$ is of higher degree in the subgraph variables than ψ_γ

theories with spin:
take $\underline{\psi}$, $\underline{\Phi}$, and a third polynomial G
(corolla polynomial)

From these 3 polynomials, you can derive Feynman rules of SFT, starting from ϕ^3, scalar field th.