Constraints on $G(u,v)$

$$G_{uv} = -\frac{1}{x^4}\left\{1 + 2\frac{y^2}{x^2}\right\}\int_0^x \ln(1+x)\,dx - \frac{1}{6}\frac{y^2}{x^3(1+x)}$$

$(\partial_\mu \phi)^2$:

$$G_{uu}\frac{(iD)^2}{\phi^4}(\partial_\mu \phi)^2 + G_u \frac{iD}{\phi}\left\{\frac{2(\partial_\mu \phi)^2}{\phi^2} - \frac{\Box \phi}{\phi}\right\} -$$

$$- G_{uv}\frac{(iD)^2}{\phi^2}\Box \ln \phi \quad \longleftrightarrow \quad \frac{1}{12}\frac{(\partial_\mu \phi)^2}{(\phi + iD)^2}$$

$$u\Big| \Rightarrow \frac{iD - f_{03}}{\phi} \qquad v\Big| \Rightarrow \frac{iD + f_{03}}{\phi} \qquad x = \frac{u+v}{2} \Rightarrow \frac{iD}{\phi}$$

$$u = x - y \qquad v = x + y \qquad y = \frac{v-u}{2} \Rightarrow \frac{f_{03}}{\phi}$$

$\lambda i \partial \lambda$:

$$-2\frac{1}{\phi}\left(\frac{iD}{\phi}\right)^2\left\{3G_{uv} + \frac{iD}{\phi}(G_{uuv} + G_{vvu})\right\} \longleftrightarrow$$

$$-2\frac{1}{\phi}\frac{\ln(1+x) - x}{x^2}$$