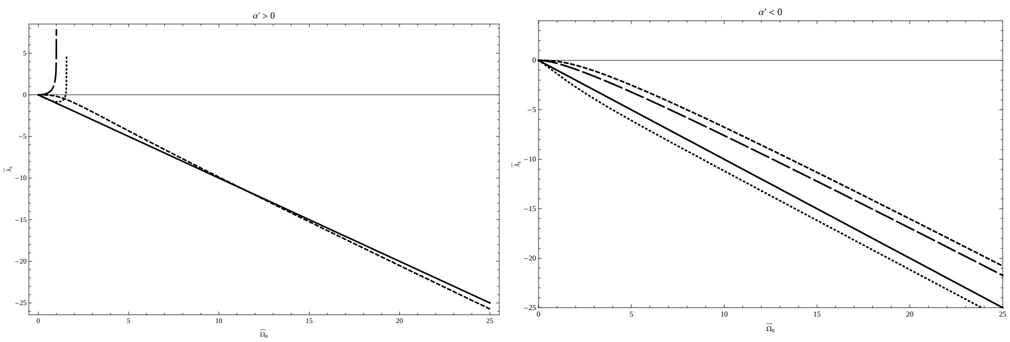

(a)$\alpha' > 0$ (b)$\alpha' < 0$

FIG. 11: $\bar{\lambda}_s$ vs $\bar{\Omega}_0$. The plots for different orders are 1^{st} (continuous line), 2^{nd} (long dashed line), 3^{rd} (short dashed line) and 4^{th} (dotted line).

that limit, we expand the solutions obtained at various orders Eqs.(39)-(41) and (44) in the powers of $1/\bar{\Omega}$ as follows –

$$\lambda + C_1 = \bar{\Omega} \tag{45a}$$

$$\lambda + C_2 = \bar{\Omega} \pm \ln\bar{\Omega} - \left(\frac{1}{\bar{\Omega}}\right) \mp \frac{1}{2}\left(\frac{1}{\bar{\Omega}}\right)^2 - \frac{1}{3}\left(\frac{1}{\bar{\Omega}}\right)^3 + \dots \tag{45b}$$

$$\lambda + \tilde{C}_3 = \bar{\Omega} \pm \ln\bar{\Omega} + \left(\frac{1}{\bar{\Omega}}\right) \pm \frac{3}{2}\left(\frac{1}{\bar{\Omega}}\right)^2 + \frac{1}{3}\left(\frac{1}{\bar{\Omega}}\right)^3 + \dots \tag{45c}$$

$$\lambda + \tilde{C}_4 = \bar{\Omega} \pm \ln\bar{\Omega} + \left(\frac{1}{\bar{\Omega}}\right) \mp 0.7526\left(\frac{1}{\bar{\Omega}}\right)^2 - 2.6699\left(\frac{1}{\bar{\Omega}}\right)^3 + \dots \tag{45d}$$

where constant terms have been absorbed as $\tilde{C}_3 = C_3 + \frac{3\pi}{2\sqrt{7}}$ and $\tilde{C}_4 = C_4 + 1.74045$.

We can write all pof these as $\lambda + C = \bar{\Omega} + \delta$ where δ represents the corrections over the Ricci flow due to the higher order terms in the RG flow equation. We plot these δ over the Ricci flow obtained at various order in Fig.12. We see that the leading correction over the Ricci flow is $\sim \ln\bar{\Omega}$, and other higher order corrections then vanish in the limit of large $\bar{\Omega}$.

We can see that the 2^{nd} order solution is correct upto $\ln\bar{\Omega}$ term and the 3^{rd} order upto $1/\bar{\Omega}$. We suspect, similarly, that the 4^{th} order solution will be correct till $1/\bar{\Omega}^2$, but this can be verified only if even higher order solutions are available.