Motion of much fewer branes can also lead to inflation, first realized in [51, 558, 647, 665, 669–671, 679, 680, 911–916], for a review see [49]. Consider a system of $Dp - \overline{Dp}$ branes, where they interact via closed string exchanges between the branes, i.e. the attractive gravitational (NS-NS), and the massive (R-R) interactions, see [867], yields, $V(y) \approx -\kappa_{10}^2 T_p^2 \Gamma((7-p)/2)(1/\pi^{(9-p)/2} y^{7-p})$, where $T_p = (2\pi\alpha')^{(p+1)/2}$ is the Dp brane tension, and y is the inter-brane separation. For $p < 7$, the potential vanishes for large y. At very short distances close to the string scale, there develops a tachyon in the spectrum, $\alpha' m_{tachyon}^2 = (y^2/4\pi^2\alpha') - 1/2$, which leads to annihilation of the branes, and a graceful end of branes driven inflation.

In a more realistic scenario, the branes have to be placed in a warped geometry. As a consequence of flux compactification, any mass scale, M, in the bulk becomes $h_A M$, where $h_A \ll 1$, near the bottom of the warped throat. Thus the warping affects the overall normalization of the potential. It is assumed that a $D3$ brane is slowly falling into the attractive potential of an $\overline{D3}$ brane placed at the bottom of the throat. The sum total potential for a $D3 - \overline{D3}$ brane potential is given by [49]:

$$V(\phi) = \frac{1}{2}\beta H^2 \phi^2 + 2T_3 h_A^4 \left(1 - \frac{1}{N_A}\frac{\phi_A^4}{\phi^4}\right) + \ldots\,, \tag{484}$$

where $\phi = \sqrt{T_3} y$, the value of warping depends on the throat geometry, typically $h_A \sim 10^{-2}$, $N_A \gg 1$ is the $D3$ charge on the throat, and $\beta \sim \mathcal{O}(1)$ arises due to the kähler potential, which obtains contributions from the brane positions. The first term is reminiscent to the SUGRA η problem, which plagues the brane inflation paradigm in general. A successful inflation would require $\beta \ll 1$, the inflationary predictions are very similar to that of the hybrid model of inflation.

There are some drawbacks of this scenario, the flatness of the potential is hard to obtain naturally, one can try to modify the situation with dual formulation where instead of brane separation, one uses branes at angles [912], assisted inflation [558, 559], or $D3$ brane falling towards $D7$ branes [665, 679, 680, 913]. The issue of initial condition is crucial for the brane inflation scenario to work, the position of a $D3$ brane has to be away from the bottom of the throat, but there exists no stringy mechanism to do so. In a recent study [917–919] an argument has been provided where it is possible to realize a slow-roll motion for a $D3$ brane where $D7$ brane is also extended in the bottom of the throat. In all these examples inflation happens near the *point of inflection*, which was first studied in the context of MSSM