In this work the authors find an intriguing observation about QFT. They show that a QFT with local topological operators have universes. Such universes are separated by infinite tension domain walls, and thus, different universes can have different cosmological constants. The authors work out the details of these topological operators in both charge-N Schwinger model and pure YM. Finally, they discuss that the deformations have an apparent conflict with the notion of effective field theory.

The paper is clearly written and many discussions are interesting. However, there is one confusing point that I need the authors to clarify. Take charge N=1 Schwinger model and introduce an external electric field F and two fundamental charges $\pm e$ separated by a distance d. Then, the total electric field outside the charges is F and the field between the charges is $F \pm e$. The difference in the vacuum energy between the two configurations is proportional to $(F \pm e)^2 - F^2$. Thus, if $|F| > e/2$, pair creation will happen until $|F| < e/2$. This can be understood either as a Schwinger effect (real time dynamics) or as an instanton tunneling (Euclidean path integral). Thus, effectively one parametrizes the physical effect with periodic $\theta \equiv 2\pi F/e$. This is well explained in the seminal work by Coleman: *More about the Massive Schwinger Model*, ANNALS OF PHYSICS 101, 239-267 (1976). So, the three independent parameters in $N = 1$ Schwinger model are m, e, θ. Now, let's take $N = 2$. According to the authors, there exists two universes that are separated by an infinite-tension domain wall, which in this case are the fundamental, $N = 1$, charges. The vacuum energy difference is controlled by Λ, which is a new independent parameter of the system. My question is: why then pair creation does not happen when the difference of the energy densities between the universes is bigger than $\sim e$? Is it because there exists no instanton that facilitates tunneling between the universes? The author may want to elaborate on this point.

Now, regarding the naturalness problem that the authors raised. If the universes cannot talk to each other (e.g. no instantons, mixings, etc.) is it surprising that the electron mass does not get contribution from Λ? In other words, since local physics can never detect the other universes, I do not see a conflict with the naturalness problem. I would like the authors to comment on this point.

In addition, I have the following questions/comments:

1. In page 6 after eq. (2.9) the authors state that insertions of U with weight 1 amounts to gauging a discrete symmetry, and it is not the case when the weights are non-trivial. Could the authors explain why? Also, I think there is a typo there as they mention 1-form $\mathbb{Z}_N$, which is supposed to be a $d-1$ form at this level of discussion.

2. The authors do not define d_r in eq. (4.2), which is supposed to be the dimension of the representation.

3. At the top of page 14, the authors say: "...... .ω with an element in δ to obtian an element in γ". Do they mean in ρ?

4. At the bottom of page 14 the authors say that "....all examples of 2d QFT ....that we are aware of". In addition to Schwinger model and YM, what other examples the authors have in mind?