

The authors of the paper consider a geometric theory of twisted bilayer graphene (TBG) and rotating bilayer graphene (RBG) based on the tetrad formalism. In context of the elasticity theory, such an approach is quite standard and has been widely used, e.g. to study curved monolayer graphene; see, for instance, Vozmediano, Katsnelson, Guinea, *Physics Reports* **496**, 109 (2010). The authors extend this approach to obtain the continuum theory of TBG and RBG which results in the Dirac equation in curved space describing the low-energy excitations in these systems. When generalizing such an approach to the case of RBG, it is obtained that, quite expectedly, one generates a time-dependent piece of the spin connection. This then, according to the authors, yields a non-Hermitian piece in the total Hamiltonian, see Eq. (5.1). Based on this result, the authors analyze the Bott index and claim that RBG features new topological phases.

I have the following comments and remarks to the authors.

1. The main equation used to study the dynamical properties, Eq. (5.1) has not been derived in the manuscript.
2. Most importantly, the phases obtained in Sec. 5, claimed to be novel by the authors, may be seen as non-Hermitian Chern phases, since Bott index is the real space counterpart of the Chern number, see Hastings, Loring, *Annals of Physics* **326**, 1699 (2011). Such non-Hermitian Chern insulators have been discussed, for instance, in Kunst et al., *Phys. Rev. Lett.* **121**, 026808 (2018). See also, Bergholtz et al., *RMP* 2021.
3. The authors should also explain why in the Figs. 7 and 8 the change of the topological invariant occurs at specific values of time and frequency, respectively. The phases obtained here should therefore be analyzed in more details. It is not enough to just claim that these are topological phases. For instance, what about the corresponding edge states?
4. The only section where some novelty might be claimed is Sec. V. Sec. II, III and IV are all to a large extent review of the previous results and are used to setup the formalism.

Therefore, the present paper does not satisfy the high bar imposed by SciPost Physics regarding the novelty of the reported results. Specifically, it does not meet either of the four acceptance criteria of the journal. As such, I recommend the rejection of the paper.