Specific comments

1) The analysis is based on the perturbation of a uniform flow on an erodible bed with active sediment transport. Stability plots like the one presented in Figure 1 (those in figure 2 and 3 follow as a direct consequence) are obtained by varying the wavenumber of the mode AND the Froude number of the basic state. The Shields stress increases with Fr, and so I would expect the suspended load to be negligible at low Fr (where there is bedload only) and to become increasingly important as Fr increases (and dominant over bedload for very large Fr).

Thank you for pointing out the significant aspect of our parametric space. Actually, the Shields stress does not necessarily increase with Fr because the Froude number is normalized by the square root of the product of the flow thickness and the gravity acceleration. If the flow thickness is sufficiently high, the high Shields stress with the lower value of Froude number is possible. Indeed, the numerous field surveys have indicated that the active suspended load is observable in the natural rivers that exhibit the low Froude number [e.g., Ma et al., 2017]. Therefore, we did not considered that the suspended load is negligible in flows with the low Froude number. We will explain this in the text.

It is not clear if this behaviour is correctly represented in the model, where the $alpha_s$ coefficient is abruptly set to 1 as the the threshold for suspension (69) is exceeded. The latter condition, which implies a specific value Shields stress (and Fr) for the basic flow, should also correspond to a negligible amount of suspension with respect to bedload. Is that so?

The entrainment rate of suspended load is quite small at the condition near the threshold for suspension as shown in the eq. (44). However, it rapidly increases as the entrainment rate is proportional to the third power of the flow velocity so that the influence of the suspended load immediately appears on the formation of plane beds.

2) In the search for the growth rate, the use of a spectral collocation method does not seem to be able to provide the required resolution: isolines in Figures 2 and 3 are quite wiggly, in particular close to the thresholds for transport and suspension. Perhaps more collocation points are needed?

Thank you for the comment. The smoothness of the isolines of the growth rate depends on the number of examined conditions, and it is not related to a spectral collocation method. We increased the resolution of experimental conditions to revise the figures.

3) The choice of the parameters is really unfortunate and provides an awkward mix of dimensional and nondimensional quantities. Indeed, (101) provides the parameters of the problem, so figures 2 and 3 can be more meaningfully represented in the Fr-Cz space for different values of Rp.

Thank you for the comment. We replaced all figures to use dimensionless numbers as their parametric spaces. The H-Fr diagrams was revised to D/H-Fr diagrams, and we newly added $\mathrm{Re_p}$-Fr diagrams.

Moreover, plots of the wavenumber of maximum amplification are confusing: is the wavenumber plotted that of a dune or of an antidune? Plot the growth rate of maximum amplification instead. Section 2.2 should be rewritten accordingly.

The wavenumber of maximum amplification in the plots is necessary for comparing the theoretical results with the field observation of bedforms. It is generally difficult to distinguish the dunes or antidunes with very long wavelength from the plane beds in observations. If the wavelength is too long for the observational range, they could be erroneously classified as plane beds. In fact, the Figure 2a indicated that the observed plane beds are plotted in the region that the model without suspension predicted dunes with high wavenumber, implying that this miss-plots are not caused by their long wave length. In contrast, Figure 2b indicated that they are in the region that the model predicted the formation of plane beds with the aid of active suspended load. We add this explanation in the text.

4) Since the work of Engelund it is well known that the role of suspension should be to inhibit the formation of dunes and to enhance that of antidunes. This is the picture I would like to see emerge from the linear analysis. Apart from a generic broadening of the upper plane region, which is compatible with the above framework, this picture does not surface clearly from the analysis of Figures 2 and 3.

Thank you for the comment. Figure 2 indicates that the formation of dunes was inhibited and that of antidunes was enhanced by the existence of suspended load as expected. The stability diagrams considering flows with and without suspension for coarse sediment beds ($\tilde{D} = 1.20$ mm) do not differ much (Figure 3) because the amounts of suspended load in case of coarse sediment is relatively small comparing to those of fine sediment.

5) In the stability plots with suspension some inconsistencies or, at least, some strange behaviours, appear. More precisely, in 2b and for relatively deep flows, the bed becomes plane as soon as the threshold for suspension is reached, even though the amount of suspension should be negligible there. The same happens in 2c, but not for the deepest flows. In 3b the modifications with respect to the bedload only case (3a) are inexplicable and unexplained.

We interpret it as follows: As described above, in case of the fine-grained sediment ($\tilde{D} = 0.12$), the amount of suspended load rapidly increases so that the influence of the suspended load immediately appears on the formation of plane beds. In case of the medium-grained sand ($\tilde{D} = 0.25$), the increase of suspended sediment is moderate, so that only the region of the high Fr number (0.6–1.0) is affected by suspension. The dunes are more stable (i.e. more unstable in the analysis) in the region of the low Fr number (< 0.5) and thus the influence of the suspended load is limited in that region. The amounts of suspension is quite small in case of the coarse sediment, but rather it slightly enhanced the formation of antidunes, resulting in the decrease of the region of the plane bed.

6) The appearance of a sheet flow regime has been invoked in the past as the mechanism controlling the transition between dunes, plane bed and antidunes. Although this may be more a consequence than a cause, the bedload model adopted does not handle sheet flow transport mode. I would rather drop the starred experimental observations from Figure 3 than attempt to fit them in the picture.

Thank you for the comment. We would like to keep the observational data that does not fit our theoretical framework to avoid the arbitrary choice of data sets. We consider that incompatibility of our results rather illustrated the necessity of further research.

Technical corrections

23) Therefore ... must be considered - Therefore, the influence of suspended load on the formation of dunes and antidunes is worth investigating.

Thank you for the comment. We incorporate your suggestion, but in this paragraph, we are focusing on the paucity of dunes in turbidites whereas the parallel lamination is abundant. Therefore, we revised the sentense as follows: Therefore, the influence of suspended load on the formation of dunes and plane beds is worth investigating.

33) Therefore ... we performed linear stability analyses - we performed a linear stability analysis

Thank you for the comment. We revised it.

62) The section starts with the same sentence than 41. Please rephrase.

Thank you for the comment. We removed the first sentence of Section 2.1.

224) amplification -> amplitude

Thank you for the comment. We revised it.

333) wider -> larger, broader
Thank you for the comment. We revised it.

368) reasonably?

Thank you for the comment. We removed it.

371) Ultimately, our linear analysis provides a possible explanation ...

Thank you for the comment. We revised it.

376) We -> we

Thank you for the comment. We revised it.

380) I would drop the whole section: the discussion about sheet flows is totally speculative, since the model adopted does not consider bed load moving as sheet flow.

Thank you for the comment. As you mentioned, the model used in this study does not consider the sheet flow. However, as described above, we consider that our result illustrated the possible contribution of the unconsidered mechanism in the bedform formation. In this paragraph, we therefore suggested the effect of sheet flow as a candidate of the process that can be incorporated in the linear stability analyses in the future works.