Although the core topic of the paper, algorithmic alternatives for approaching difficult (unbalanced) cooperative games in a S&P scheme, is indeed interesting, the contribution of the paper, in particular in the view of this special issue's "applied" nature, is extremely limited. In this sense,

the main concerns of this referee can be summarized as follows:

1. Theory and methodology of the papers basically relies on work presented in (Liu, L., X. Qi, and Z. Xu, 2018, Simultaneous penalization and subsidization for stabilizing grand cooperation, Operations Research, in press). Therefore, this paper becomes rather a well performed programming exercise, whose challenge corresponds to implementing a rather standard approach based on subtour elimination constraint separation embedded into a Lagrangian relaxation scheme.

2. The author does not provide any strong motivation nor of the problem nor of the methodology from a practical standpoint. Recall that the special issue' description, explicitly declares "The aim [...] is to bridge the gap between science and real-world, by providing effective formulations and algorithms that allow solving practical problems". In this sense, not even the instances are real, or at least realistic. Furthermore, not even standard TSPLib instances are used (after an ad-hoc adaptation). It is unacceptable that such a poor justification is provided for the way that instances are generated.

3. Despite the critic presented above, computational results and analyses are poor in terms of showing the problem's game nature, as well as understanding adequately how a S&P scheme differentiates with respect to other coalition stabilization strategies. Moreover, at the end of Section 4, the author writes "This underscores the importance of subsidy in stabilizing the grand coalition, especially when the game is large"; however, there are not enough elements for declaring such conclusion.

Finally, in general the paper is well written, although there are some typos and unclear passages (which are listed as minor comments).

Minor comments:

1. p1, l51: it should be $2^{|V|}$ instead of $2^{V}$; i.e., the cardinality of set $V$ defines the domain. This repeats across the whole paper, please verify.

2. p2, l36: "In the ..." -> "As for ..."

3. p2, l38: write "hence" after semicolon

4. p3, l6: when -> then

5. p3, l11: define \beta(\cdot)

6. p4, l3: to -> for

7. p4, l9: add space after "(TSP)"

8. p4, l14-l16: rewrite sentence as "... based on Lagrangian relaxation for computing the ... "

9. p4, l26: "computationalLY"

10. p7, l23: ... approach for AN approximate ...

11. p7, l32: "... with cl(s) and cu(V), RESPECTIVELY, we ..."

12. p7, equation 4: the use of cl(s) and cu(V) must be explained in more detail

13. p7, l48-l52: the paragraph is quite odd, please re-write

14. p8, l17: \lambda is a vector, please use proper notation (same applies in the remainder of the section)

15. p8, l42: .... best Lagrangian multiplierS ...

16. p8, l49: .... Lagrangian multiplierS ...

17. p9, l5: ... is decreasing WITH RESPECT TO \omega ...

18. p9, l8: ... for THE IM game...

19. p10, l11: remove "of" between "problem" and "(8)"

20. p12, l27: the common notation for edges is {i,j}; notation (i,j) typically refers to (directed) arcs

21. p13, l18-29: the sentence "they ensure that no tours only partially cover the cities in ..." is odd, please re-write

22. p19, l37-38: the sentence "The LRB algorithm is one such practical algorithm that can lead to interesting results when applied specifically to other cooperative games" is odd, please re-write.

23. p21, l20: please fix the reference.