I would like to thank the reviewer for all valuable comments and suggestions, which we try to fullfill in the final thesis.

**Suggestions**

* The structure of writing the contents is not strong enough. Each part is  
  ok to read, but the whole structure of writing has to be reconsidered more concisely. For example, after reading the abstract, the list of contents is  
  very inconsistent to the abstract. The dynamics of Sections are not really  
  clear. It is general suggestion to write the whole story more tightly to  
  guide the reader for better understanding of the thesis.

We will try to improve it in the final thesis. For example...

* The derivations of the methods are extremely too short. Since the main  
  content of the thesis is to develop or design a novel numerical algorithm,  
  the majority part should be detailed, very slow, and kind step-by-step explanation to solve the first order scalar conservation laws. Moreover, some  
  parts of the proposed algorithms are inspired by the classical methods and  
  then such a corresponding point should be written more precisely.

Thank you for the feedback. Writing that part we did not recognize, that the derivations are short. In the final thesis we give a more detailed derivation of the novel algorithm presented.

* The small stories related to names of inventing the famous equations are  
  interesting, of course. However, in my humble opinion, they could be  
  written in footnote, but not in the main part of writing in a thesis.

We aggree, that it would be much better to write the stories in the footnote. Also in the book...

* They are many unnecessary adjectives such as „famous Navier-Stokes".  
  The word “famous“ is not really necessary.

These words are not necessary to understand the material, however, in my opinion these words make the text more interesting(passionate).

* On page 13, \on page 26" is not necessary.

Referring only to the figure would be sufficient.

* On page 19, \advection terms of the nonlinear equations" might be better  
  to write \ ".

We aggree, the expression „nonlinear advective terms“ gets straight to the point.

* In Section 2.2, the word \inflow" is naturally originated by the fact that  
  it makes negative flux, that is, the inner product between an outward  
  surface normal and a vector is a negative sign, then the vector quantity is  
  actually going inside to an interval (or a cell) from outside of the interval  
  (or a cell). *vi-*1*=*2 *>* 0 is explained as \inflow" and it is correct. The  
  better way might be *-vi-*1*=*2 *<* 0 is inflow because it is one-dimensional  
  correspondence of inflow in three-dimension.

This is a good suggestion, we consider it in the final thesis.

* In the first paragraph of Section 2.3.1, \similar to (2.10)" makes a question  
  what they are similarities and differences. It seems to be interesting to see  
  what actually makes something different from previous algorithm in [21].

We admit, that it would be better to explain what are the differences. In our previous work, presented at Algoritmy 2020 conference, the inflow coefficients depended on the sign of the solution (velocitites) in the new time step. In the present work these depend on velocities in the previous time step. In this new work, we fixed the inflow and outflow boundaries of finite volumes according to the solution in the previous time step, while in the previous work it was not fixed.(There can appear coeff., which can cause violation of M matrix prop. This is the only possible consequence. Since it may happen in a few places, we can expect that the system remain solvable and solution stable. But it needs further research.)

* In the last paragraph of page 22, \nonlinear iteration" is quite strange  
  words. It actually means an iteration to approximate a nonlinear term.

This is a good point. We aggree with the referee remark.

* When the errors are bounded even if an oscillation occurs, it would be  
  better to numerically measure *Linf*, *L*1, or *L*2 errors along a long time and  
  show one of the values does not increase. Of course, presenting graphs in  
  Figures 2.6, 2.19, 2.20, and 2.21 are also great. In the end, it might be  
  also interesting to see which norm of the error is not increasing.

Yes, we plan to do it in our future work.

* In Figure 2.11, the initial profile is in blue, but in Figure 2.12, the initial  
  profile is in black. It is ok for now, but not nice in the final thesis.

I will take more care about such points in the final thesis, thanks for remark.

* If FLIIOE works nicely, why not trying to solve 1D Euler equations like  
  a standard shock tube problem? It contains many challenging factors in  
  computation. It will be a good comparison with many other methods with  
  tons of different flux limiting schemes.

It would be very interesting to try the scheme on more complicated hyperbolic equations, like the Euler equations. If time allows, we include that in the final thesis.

* As you are already aware of weighted essentially non oscillatory (WENO)  
  schemes, they are a method to solve the conservative equations in an  
  extremely high order. Then, it would be also interesting to see what it  
  is a co-relation between WENO and FLIIOE. Maybe it will help to write  
  the propose method in a finite difference notation, then it can be seen  
  more directly. The WENO method is originally natural to be used in a  
  structured grid. Now, it is also available in quite a general type of cell  
  on three-dimensional domain, not even using large neighbor cells which is  
  called compact WENO. If FLIIOE is possibly used in multi-dimensional  
  domain on polyhedral meshes, it will show its strength naturally.

This is an interesting point, we consider that in the future. ....

* The higher dimensional problems would be better to be achieved in the  
  final PhD thesis, at least, two-dimension cases.

We try to go in this direction, for example by directional splitting, where we can use our knowledge from 1d cases. Another goal is to solve the traffic equations on networks.