Response to Referee Reports

Comments from referees are shown in black color, while authors' responses are written in blue color. Texts added to the manuscript are appeared in green color.

1. the format for the reference is not correct, i.e. the authors should be in the form surname (with only the first letter capitalized) followed by the initials with no periods after the initials. (see the details in JPCSExampleWordDocument.docx).

Thank you for your corrections. We revised our reference form to be as follows.
"Milora S, Houlberg W, Lengyel L and Mertens V 1995 Nuclear Fusion 35 657–754"
"Takenaga H et al. 2001 Physics of Plasmas (1994-present) 8 2217–2223"

2. Content corrections: Section 2.2 The term of "plasmoid" need to be clarified and defined. The term seem to be not mentioned so far.

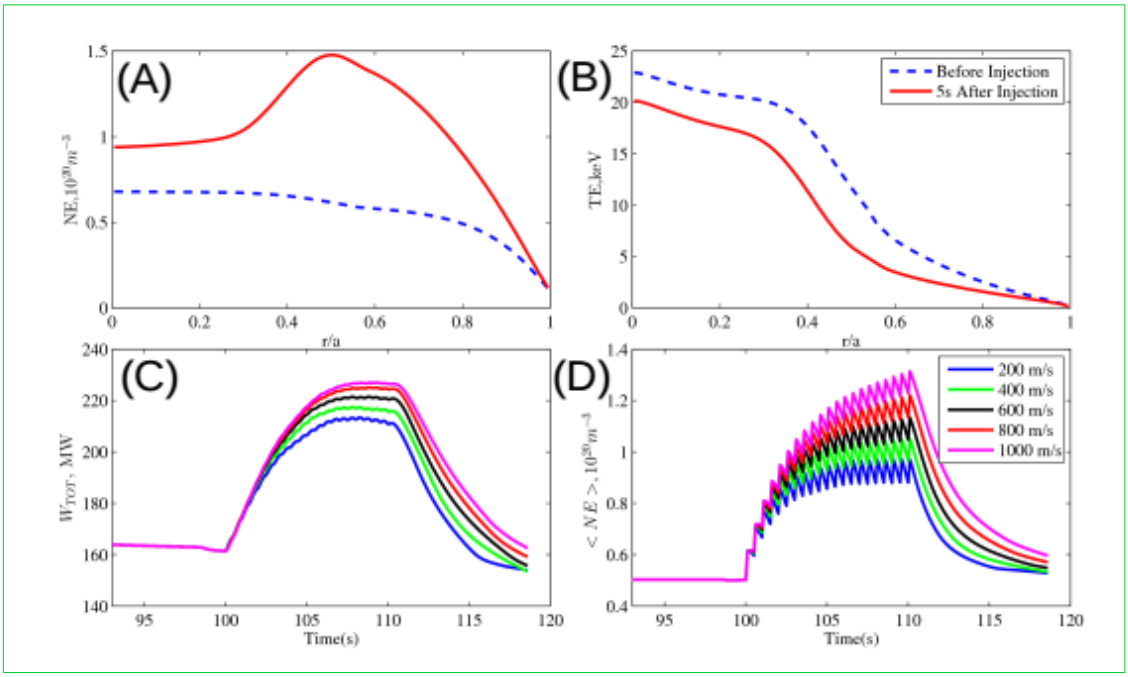
Thank you for your comment. The word plasmoid refers to high density blob plasma . Those description was added to the revised version.

3. Section 3 paragraph 1 "7" --> "7 \times 10^{19}"

Thank you for your suggestion. That number is revised as referee's comments.

4. paragraph 3 "...we can see the degradation of temperature profile ..." means the temperature profile after pellet deposition should be lower than that before pellet deposition. However, Figure 1 B) does not satisfy the sentence.
-paragraph 4 "these graphs clearly shows ... greatly improve the plasma stored energy with more than 20-25 % change." What is "20-25%" compared with? The next sentence said that the difference in energy stored for pellet injected by 1000 m/s (highest) and 200 m/s (lowest) is just 5%. This then concludes that 200m/s is more or less enough because it makes no significant difference in energy stored if we changes injection velocity. So, what does "20-25%" mean?

Thank you for addressing this important issue . To show more clearly results and explanation , we decided to change our injection frequency from 0.5 Hz to 2 Hz and pellet size from 4 mm to 3 mm. The revised graphs and descriptions are showed below.



“Figure1A and 1B shows the electron density and electron temperature profiles before the pellet injection and five seconds after pellet injections. Note that pellets with unity ratio between deuterium and tritium are launched with the injection frequency of 2 Hz, radius of 3 mm, and speed of 500 m/s. After pellets are released, it results in a sharp increase in the density profile near the edge and also lead to a peaked density near the normalized minor radius r/a = 0.5. On the other hand, we can see the degradation of temperature profile on both edge and core regions due to energy absorption in pellet ablation process.

Figure 1C and 1D shows the predicted temperoral evolution of the total plasma stored energy and the line average of electron density when pellets are injected with frequency of 2 Hz, radius of 3 mm, and the injection speeds vary between 200 - 1000 m/s. These graphs show that pellets can increase the plasma stored energy up to 210-230 MW or 25-35% improvement compared with the plasma stored energy of 165 MW before the pellet operation. We found that there is only 10% difference in the energy stored in the plasma when the pellets were injected with 200 m/s and those injected with 1000 m/s. Thus, launching speed of 200-300 m/s is enough to improve the fusion performance by amount of 25%. In further research, pellet parameters (i.e. injection frequency, mixing ratios, injection angles) and plasma stability should be investigated to find more proper ways for fueling and control ITER plasma.”