

Thank you for a valuable comment to my manuscript. I have modified it according to the reviewer's comment. In addition to the comment, the title was changed so as to more reflect contents of the manuscript. Minor changes of English expression have been done. The details of the revision are shown in the following:

1. The reviewer's comment:

*The paper is almost ready for publication. Only one comment:*

*"Noted that ion energy of the plasma is distributed, meaning that condition of PSI is equivalent to that of the torus plasma from a viewpoint of hydrogen recycling."*

*The statement from introduction should be clarified. What kind of distribution do you mean?*

Thank you for the valuable comment. I have revised the statement and added a reference to explain in more detail.

Original sentences:

*"Noted that ion energy of the plasma is distributed, meaning that condition of PSI is equivalent to that of the torus plasma from a viewpoint of hydrogen recycling."*

Revised sentences:

"In almost all linear plasma devices for boundary plasma and PSI studies, plasma is generated by DC discharge or RF discharge without plasma confinement, and therefore ion temperature is rather low. The ion energy can be increased by target biasing but the energy becomes monotonic. In GAMMA 10/PDX, on the other hand, a main plasma is confined and thereby ion energy of the plasma is high and distributed as well as electron. It is reported that the ion energy distribution function of the end loss plasma consists of two Maxwellian distributions [9]. A distributed ion energy is suitable to study PSI phenomena such as hydrogen recycling from the viewpoint of divertor simulation for torus plasma. Besides, behavior of neutral atoms in the recycling process can clearly be observed due to the low background pressure in the vacuum vessel. In this paper, impact of target temperature on the hydrogen recycling is discussed."

2. Additional revisions:

(1) P.1, Title:

I told an overview of hydrogen recycling study utilizing end region in GAMMA 10/PDX in the conference. So, the original title is "Hydrogen recycling study utilizing end region in the GAMMA 10/PDX tandem mirror". In the present manuscript, however, I wrote a part of the overview. So, I want to change the title of this paper so as to more reflect contents of the manuscript. A new title is "**Impact of Target Temperature on Hydrogen Recycling in Divertor Simulation Plasma of GAMMA 10/PDX Tandem Mirror**".

(2) Figure 5 in the original manuscript has been divided into Fig. 5 and Fig. 6.

In order to see clearly, Fig. 5 in the original version has been divided into Fig. 5 and Fig. 6 in the revised version. It means that Fig. 5(f) in the original version became Fig. 6 in the revised version.

3. In order to improve English expression, we have modified sentences as follows:

#### P.1, Abstract

(1) 1st line, “temperature-controlled target” ==> “temperature-controlled **V-shaped** target”

(2) 2nd line, “temperature on **the** hydrogen recycling” ==> “temperature on hydrogen recycling”

(3) 4th line, “plasma in the D-module” ==> “plasma **in front of the target**”

#### P.1, INTRODUCTION

(4) 5th line, “promoted to study **the** boundary plasma” ==> “promoted to study boundary plasma”

(4) 6th line, “installed in the end region of the mirror device to make best use of...”

==> “installed in the end region of the mirror device **and it is exposed to the end loss plasma** to make best use of...”

(5) “high ion temperature of the plasma **exposed to the D-module** (i.e. a few hundreds eV)”

==> “high ion temperature of the **end loss** plasma (i.e. a few hundreds eV)”

#### P.2, EXPERIMENTAL RESULTS AND DISCUSSION

(6) 3rd line, “The end loss plasma was exposed to the V-shaped target in the D-module.”

==> “The V-shaped target in the D-module was exposed to the end loss plasma.”

P.4, last line, “considered to **be an** effect of target temperature” ==> “considered to **mean the** effect of target temperature”

#### P.5, SUMMARY

(7) 1st line, “on **the** hydrogen recycling” ==> “on hydrogen recycling”