Dear Reviewer A,

Thank you very much for your questions and suggestions to improve my manuscript quality. Answers for your questions and suggestions are shown in the following.

**Question or suggestion**

1. Abstract: It is suggested to state clearly that the numerical investigation is based on a low speed “incompressible” flow in the abstract.

**Answer**

Following sentence was added in ABSTRACT.

*The RANS simulations of incompressible flow in the test compressor were performed*

**Question or suggestion**

2. Figure 1:

a. The inlet velocity and direction (outlet of an Inlet Guide Vane or a previous stage) are described in 3.2, however, the direction is not consistent with those in Fig. 1.

**Answer**

The inlet flow direction was shown in Fig. 2.

**Question or suggestion**

b. In addition, the stagger angle and the axial chord length should be illustrated in Fig. 1.

**Answer**

The stagger angle and the axial chord length of test cascade were added in Table 1.

**Question or suggestion**

3. 3.1 Computational method:

a. The principle of selection of governing equation and numerical model/scheme should be explained.

**Answer**

The above principles were added in “3.1 Computational method”.

**Question or suggestion**

b. It is suggested to provide the solid support and selection concept of why an incompressible flow model is employed in highly compress flow device. (In general, the numerical investigation can be performed in a compressible flow condition. However, if the author desires to use the experimental condition in [6] as a reference, a comparison of the results between the numerical method with those of the experiments in [6] should be provided.)

**Answer**

In this study, the computations were performed at subsonic flow condition according to the experimental condition in Ref. 22. The comparison of the present computed result with the experimental data was shown in “3.3. Y+ and validation of computed result”.

**Question or suggestion**

c. The photograph of Mesh as well as a plot of y+ around the compressor blade is preferable.

**Answer**

Figures of computational grid and Y+ distribution on wall surface were added.

**Question or suggestion**

4. 4. RESULT AND DISCUSSION: Please check the spelling of the topic.

**Answer**

“RESUITS AND DISCASSIONS” was modified to “4. RESULTS AND DISCUSSIONS”.

**Question or suggestion**

5. The nomenclature LE and TE: of the leading edge and the trailing edge in Fig 3, 4, 5, 6 and 8 should be clearly described.

**Answer**

The explanations of above nomenclatures were added.

**Question or suggestion**

6. The nomenclature Qg: is not defined.

**Answer**

Following sentence was added.

*Figure 7 shows the flow rate Qg of the tip leakage flow through the surface Sg indicated in this figure and it was normalized by the flow rate through the single passage.*

**Question or suggestion**

7. Figure 7: The leak flow rate is measured through only a small area Sg. It is suggested to demonstrate the flow rate through out the entire gap at the blade tip (yellow + red area).

**Answer**

In the same manner as the trend shown in Fig. 7, the tip leakage flow rate through the red and yellow regions at GW is smaller than that at GW. Because the groove generally reduces the tip leakage flow rate around the groove, I focused on the tip leakage flow rate through the yellow region.

Dear Reviewer C,

Thank you very much for your questions and suggestions to improve my manuscript quality. Answers for your questions and suggestions are shown in the following.

**Question or suggestion**

I think that it is more helpful for understanding that there is a picture of the whole structure before Fig.1

**Answer**

Figure of 3 dimensional model of the test cascade was added.

**Question or suggestion**

Page 1 left column, last sentence.: Isn't this expression correct, ‘the blade height’ not ‘the blade high’?

**Answer**

“the blade height” is correct.

**Question or suggestion**

Page 2 left column, first sentence: what is ‘GE Rotor B Section Blade’?

**Answer**

 “GE Rotor B Section Blade” is the compressor rotor blade and its configuration is representative of the core compressor of an aircraft engine.

**Question or suggestion**

Page 2 left column, last sentence in Section 2. Why do you set the clearance size to 4.2 mm and 1.27 mm and follow the design of Ref. 5?

**Answer**

The clearance size of 4.2 mm was set by referencing Ref. 22. 4.2 mm corresponds to 1.65% of blade chord. In general, this clearance size (=1.65% of blade chord) is regarded as the large tip clearance and approximately same as that at the rear stage rotor of gas turbine compressor. On the other hand, the tip clearance size of 1.27 mm, which corresponds to 0.5% of blade chord, was set by referencing the clearance size at the front stage rotor of gas turbine compressor.

**Question or suggestion**

Page 2 left column, 11th sentence in 3.2 section: What is the difference between α1 and β1(Table 1)?

**Answer**

The explanation of α1 was added in Fig. 2.

**Question or suggestion**

You mentioned Fig. 4in section 4. However, there were no explanations about abbreviation in Fig 4 such as LE, TE, PS, SS… It is similar for other Figures. Before using abbreviations, explain the meanings of those.

**Answer**

The explanations of above nomenclatures were added.

**Question or suggestion**

In Fig. 7 there is Qg.However, Qg is not mentioned in main paper. Explain what is Qg?

**Answer**

Following sentence was added.

*Figure 7 shows the flow rate Qg of the tip leakage flow through the surface Sg indicated in this figure and it was normalized by the flow rate through the single passage.*