

We thank the referee for their useful comments on our paper, and have revised parts of it accordingly. We have highlighted the main changes and the removed content to the text in the blue font and the red font, respectively, although we note that other small improvements to the text have been made throughout the paper. We reply directly to the referee's points below (our replies are marked with an asterisk).

The proceeding presents the spectroscopic study of one ULX source, NGC 1313 X-1. The manuscript is well written with only a few typos and mistakes. I would like to merit publication after minor corrections mainly on the presentation of the manuscript.

Major comments:

My main concern is that the objective of this study is not quite clear to me.

1) Do the authors try to investigate if NGC1313 X-1 is a candidate for IMBH or stellar mass BH? Or do the authors want to see what regime the spectrum of this object is?

\*We purpose that the ULX NGC 1313 X-1 is a stellar mass black hole accreting matter at super-Eddington state. In this work, we attempt to study how the ULX accretes matter at this supercritical regime. We have revised the text in the introduction section to clarify for this.

2) The above question leads to this one. Why do the authors have to study this particular object?

It would be great to mention what make this object special or best suitable for the study.

\*We choose the NGC 1313 X-1 because it is one of the closest and bright ULX, so that can provide the high quality spectra for the study. In fact, it also shows the spectral variability. So this source is a good candidate for study the underlying physics of super-Eddington ULXs. We have revised the text in the introduction section to clarify for this.

3) According to Figure 1, the spectra seem to show the variation across the time of observations. Is it possible that the object changed their phase of accretion?

\*In this work, we would like to study how the ULX accretes matter at super-Eddington state, including whether the accreting phase is changed with increasing luminosity? We used different types of physical models to fit with the spectra, in order to be obtained the physical interpretation for this spectral change. We argue in the section 3 that the BB+DISKPBB best explains the spectral evolution; indeed these modelling results are consistent with the theoretical prediction. We could alternatively use other models such as MCD+Comptonisation to explain the spectral evolution. However, as the physical meaning is not reasonable, we reject the interpretation from the MCD+Comptonisation model.

4) It seems to me that the spectrum from the observation in 2014 is better described by single broadened disc model (Figure 1). Why did the authors choose to fit it with the two-component model?

\*We have already attempted to fit the spectrum from the observation in 2014 with the single disc component models (e.g. absorbed MCD model or absorbed DISKPBB model). The fitting results show that the final statistic (reduce chi-square) is insufficient to accept the model. In fact, although the spectrum seems to be a single disc continuum, it requires a two-component model to explain as suggested by the reduce chi-square. This broadened disc spectral behaviour has also been reported in the previous works (e.g. Middleton et al. 2011). However, we decide to not show the fitting results from the single disc model due to the limitation of the space, as the paper is required to be not longer than 4 pages.

Minor comments are listed in the order of appearance in the manuscript.

1) Introduction:

1.1) It would be nice to briefly explain sub/super-Eddington rate so that the readers who are not familiar with black holes can easily follow.

\*The brief explanation is added to the introduction section.

1.2) At the sentence starting with "Later, Sutton et al. ...", there are two "and" in describing 3 regimes. Remove the former one.

\*It is corrected.

1.3) The explanation in the parenthesis for each ultraluminous case is difficult to understand. It would be easier if the authors can explain it with a figure.

\*We agree with the referee that insert the figure would be easier for the reader to understand. However, due to the limitation of the 4 page space, we add text to refer to the figure in the original paper.

1.4) As mentioned in the major comments, the authors should explicitly explain the reason for choosing to study this particular ULX.

\*The explanation is added to the introduction section.

1.5) It would be good to say the study is based on archival data in the introduction.

\*The text is added into the introduction section.

2) Section 2:

2.1) In Table 1, if the authors want to show the table before the second paragraph, it would be great to briefly explain the meaning of extraction radius.

\*It is corrected; the table presents after the 2<sup>nd</sup> paragraph in this version.

2.2) There is a small "a" at Lx. Where is the note for "a"?

\*The note is removed; we apologise for this typo.

2.3) What are PN, MOS1, and MOS2 in the 2nd paragraph? Please explain in the text. It will be very helpful for the readers who are not familiar with XMM-Newton.

\*We slightly modify the text, and also add the footnote number 3 in order to explain for this.

3) Section 3:

3.1) On the 5th line, successful -> successfully

\*It is corrected.

3.2) The authors described the reduced chi-squares in the discussion while keeping the d.o.f in Table 2. I understand that the authors may try to show the d.o.f., but it would be easier to understand if the authors consistently use the reduced chi-square.

\*It is corrected; the reduced chi squares are reported in this version.

3.3) What is the conclusion of the second-half of the 3rd paragraph? The authors explain that the spectra are better fitted with power-law + comptonization model and mention previous studies. Do the author try to say that their results are consistent with the others?

\*We argue that the MCD + Comptonisation model do provide an acceptable statistic but do not provide the reasonable physical meaning. In fact, the corona behaviour is in contrast with what is well known in the galactic binary black holes. We revise the text in this paragraph to clarify for this.

3.4) The authors did not explain what BB and DISKPBB stand for. BTW, is DISKPBB in the 3rd model identical to the MCD in the previous ones?

\*The DISKPBB is the MCD in which the exponent of the radial dependence of the disk temperature (i.e. parameter  $p$ ) can be varied. The brief explanation of BB and DISKPBB is added to the last paragraph of the section 3 to clarify for this.

3.5) What is the parameter  $p$  in the 4th paragraph?

\*The exponent of the radial dependence of the disk temperature in the MCD model; the definition of the parameter  $p$  is added to the text in the last paragraph of the section 3.

3.6) Please use different symbols to show the spectra from different observations in Figure 1.

\*As the size of the black symbol indicates the error bars on X- and Y-axes, so use the same symbol in the plot to show how good the models fit with the spectra. However, we add the colour code to the plot to help the reader to differentiate between the observations.

3.7) What cause the drop near 10keV for the spectrum from the observation in 2014?

\*We propose that as accretion rate increases, the outflowing wind is stronger so that obscures more fractions of high-energy photons originated from the inner part of the accretion disc. So the number of high energy photons in the spectrum observed in 2014 drops significantly due to the obscuration of the wind. We revise the text in this last paragraph of section 3 to better explain this.

4) Section 4:

4.1) The values of reduced chi-squares of each model do not differ significantly. How could the authors conclude that BB+DISKPBB model is the best one.

It would be better to plot the spectrum with different models for at least one observation to show that the BB+DISKPBB model is better fitted

\*In this work, we argue that the MCD+Comptonisaion and BB+DISKPBB models give the equally good statistic to explain the spectra. However, as the latter model provides the reasonable physical meaning which is supported well by theoretical prediction, we purpose that this model is suitable to explain the ULX spectra. We revise the text in the section 4 to clarify for this.

\*Finally, we note that to fit only 4 page space provided by the journal, we remove the original first paragraph of section 3 which is the detail of the fitting package and how spectra are modeled. The removed text is highlighted the red font.