The performance difference between two "Mobile" views was caused by the quality difference of them. As shown in Fig. 13, 5th view has sharper boundaries than that of 7th view; as a result, the 5th view showed the better coding performance as much as 0.33dB.

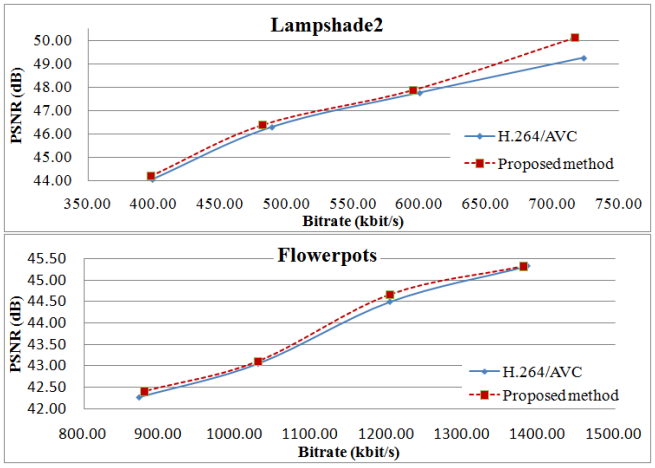
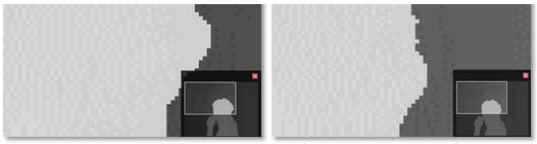


Fig. 12. R-D curves "Lampshade2" and "Flowerpots".

"Mobile" depth video (Left: 5th view, Right: 7th view)



"Ballet" depth video (Left: 3rd view, Right: 5th view)

Fig. 13. Zoom in images of input sequences

In the case of "Ballet" depth videos, relatively low coding performances were shown because they have non-homogeneous depth levels even in an object and complex form of boundaries as shown in Fig. 13. Nevertheless, its synthesized view showed better subjective quality shown in Fig. 14. The top-left shows the original 6th view, and top-right shows the synthesized 6th view from 5th and 7th depth videos without compression. The bottom-left shows the synthesized 6th view when used depth videos are compressed by the H.264/AVC. The final bottom-right shows the synthesized 6th view when the used depth videos are compressed by the proposed method. These results indicate that our proposed method would contribute to subjective quality improvement of a synthesis view even if coding gains of depth views were not significant.

5. CONCLUSIONS

In this paper, we proposed an adaptive geometry-based intra prediction method for depth video coding. The proposed method produces efficient partitioned intra prediction modes around boundaries in depth video. Moreover, characteristics of depth video: smooth depth level change and sharp depth level variation nearby object boundaries are utilized in our proposed method to improve the performance. As a result, the proposed method showed better coding performance as well as subjective quality.

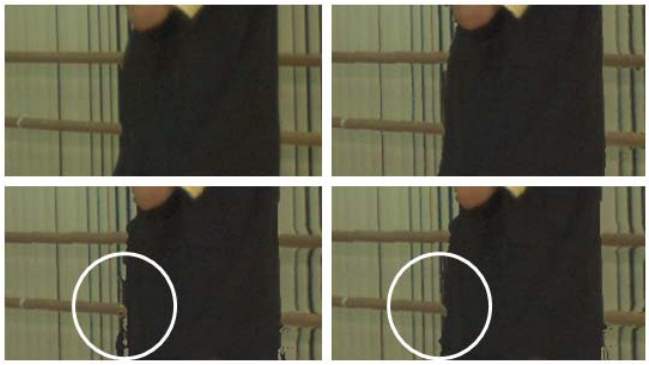


Fig. 14. Subjective quality comparison of synthesized view (Top-left: real view, Top-right: synthesized view without compression, Bottom-left: result of the H.264/AVC method, Bottom-right: result of the proposed method)

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