the algorithm for adaptively extending the window increases the complexity because it determines whether to extend it in pixel units.

5 Conclusion

In this paper, we propose a recursive window extension and clipping technique. Through that, the distortion artifacts were reduced which are caused by the difference in the structure of the reference pixels and reduction of the geometric duality between the HR and LR pixels. Finally, we can confirm that the proposed algorithm shows better performance than the other conventional algorithms this paper introduced by comparing experiment results.

Acknowledgement

This research was supported by Basic Science Research Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Science, ICT and future Planning(NRF-2015R1A2A2A01006004)

References:

[1] Carson, R.E. and F. N. Fritsch, Monotone Piecewise Bicubic Interpolation, *SIAM journal on numerical analysis*, Vol.22, No.2, 1985, pp. 386-400.

[2] J. Allebach and P. W. Wong, Edge-directed interpolation, in *Proc. IEEE Int. Conf. Image Proces.*, Vol.3, 1996, pp. 707-710.

[3] Xin Li and Michael T. Orchard, New Edge-Directed Interpolation, *IEEE Trans. on Image Proces.*, Vol.10, No.10, 2001, pp. 1521-1527.

[4] N. Asuni and A. Giachetti, Accuracy Improvements and Artifacts Removal in Edge Based Image Interpolation, in *Proc. 3rd Int. Conf. Comput. Vis. Theory Applicat. (ISAPP08)*, 2008, pp. 58-65.

[5] X. Zhang, S. Ma, Y. Zhang, L. Zhang and W. Gao, Nonlocal Edge-Directed Interpolation, in *Proc. IEEE Pacific-Rim Conf. Multimedia*, 2009, pp. 1197-1207.