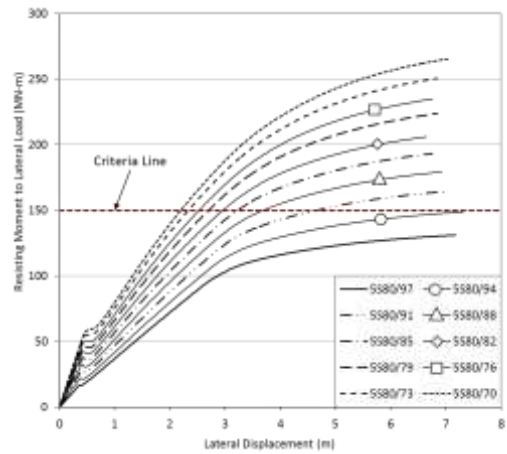
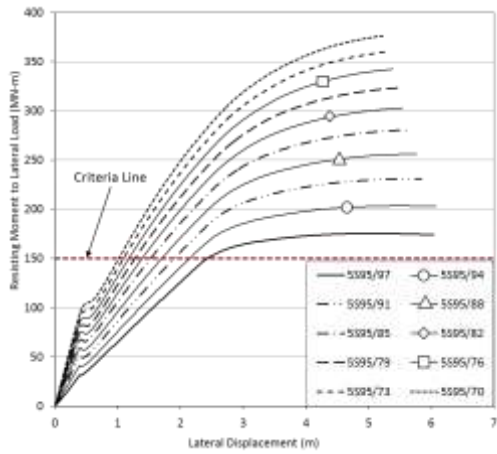


(c) 5S85 (SDE)

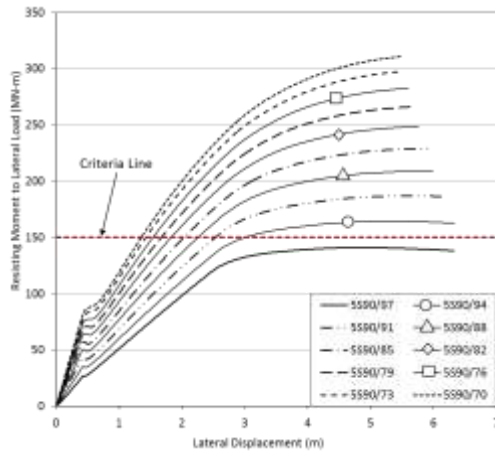


(d) 5S80 (SDE)

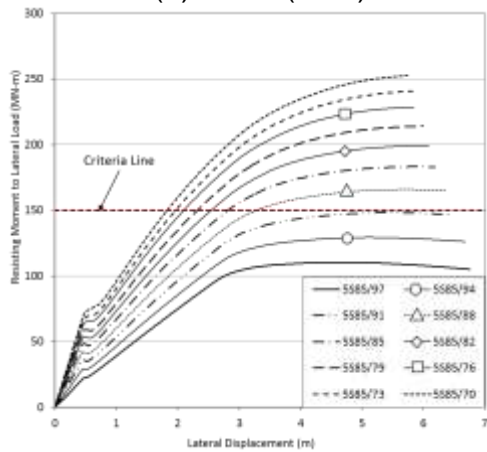
Fig. 13. Moment resisting capacity of designed DSCT towers for 5.0MW (SDE)



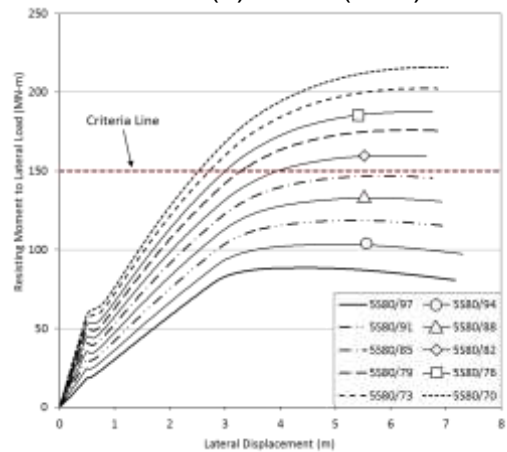
(a) 5S95 (LDE)



(b) 5S90 (LDE)



(c) 5S85 (LDE)



(d) 5S80 (LDE)

Fig. 14 Moment resisting capacity of designed DSCT towers for 5.0MW (LDE)

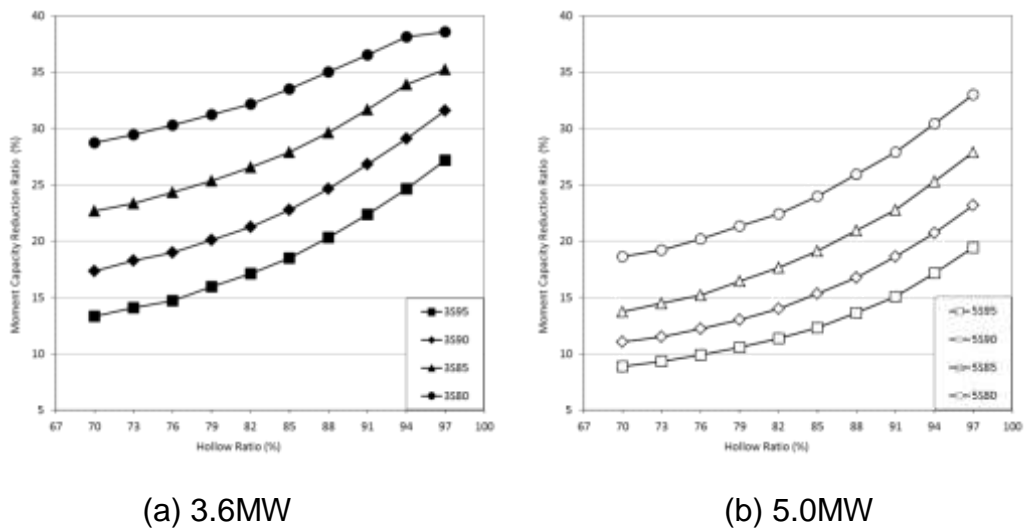


Fig. 15 Moment Resisting Capacity Reduction Ratio by Large Displacement Effect (M_w/M_n)

4. CONCLUSIONS

The automatically designed DSCT towers satisfied the required axial and bending strengths. And also, the DSCT towers showed superior performances to the referred steel wind towers although they had smaller diameters. From this result, a DSCT column can be a good candidate for the offshore wind power tower in the future. And the developed design program gave rational design sections.

For the designed DSCT wind towers, performance analyses were carried out with consideration of large displacement effect. Analysis results showed the designed sections were reasonable but large displacement effect makes the slender tower to lose much of its moment resisting capacity. Therefore, for the safety, large displacement effect should be considered in designing wind power towers.

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