CONCLUSION AND IMPLICATIONS

The following are the main findings of this study:

1) Cooling/heating load for interior zone estimated by HASP and TRNSYS had shown similar trends. In contrast, the simulated cooling/heating loads of HASP were larger than those of TRNSYS in south perimeter zone, but it came from the performance of the window was not consistent with each tool. In TRNSYS, it is not so easy to set new windows that users often select the pre-set windows from the library.

2) Annual heat loads of HASP were larger than those of TRNSYS, because of the differences of algorithms for radiative heat transfer calculation and estimating strategy for the thermal storage heat loads as well as difference of the air temperature at the pre-cooling and pre-heating.

3) Because of the same reason described in the preceding paragraph, the times of the peaks of cooling/heating loads differed from HASP to TRNSYS. Further analysis will be need for this difference.

4) There were possibilities to misunderstanding for putting value as intended by users, so that users should be careful to select correct values from input commands in HASP and to input appropriate values by referencing to literature in TRNSYS.

REFERENCES

ECCJ (The Energy Conservation Center, Japan). 2009. Energy conservation of office buildings.

HPTCJ (Heat Pump & Thermal Storage Technology Center of Japan). 2011. Thermal storage technical standards manual, operation guidebook.

Matsuo, Y., and JABMEE (Japanese Association of Building Mechanical and Electrical Engineers) 1980. Introduction to dynamic thermal load calculation for air conditioning equipment.

SEL (Solar Energy Laboratory) at University of Wisconsin-Madison. 2010. TRNSYS 17 a TRaNsient SYstem Simulation program. Program Manual.