**PREDICTION AND ESTIMATION OF CLOTHING COMFORT BY THE MODELLING OF WEAR SITUATION.** Yoo* H.S., Hur Y.S., Kim E.A. Department of Clothing and Textiles, Yonsei University, Seoul 120-749, Korea

In order to determine the heat and moisture transport which is closely related to clothing comfort, various skin models or evaluation methods have been used. Most of the skin models that have been reported so far are horizontal type, but it would be more appropriate to make the model vertically since the clothing is worn in that direction. In this study, using the vertical model, it was possible to determine not only the effect of thickness of air layers or fabric variables but also the effect of garment opening in terms of size, number and location. The openness of the garment was simulated for the neck, waist and armhole and the total openness was increased up to 60%. The wear trial was performed by using six female subjects. To predict and evaluate the clothing comfort, buffering index for water vapor, temperature regulating index, and efficiency of openness were calculated based on the vapor pressure and temperature change of the microclimate in the model. Cotton fabrics, polyester fabrics and polyvinyl chloride film were used as specimens. According to the results, as the sweat pulse begins, cotton could be more comfortable but as the time passes polyester becomes more comfortable due to the lower buffering and temperature regulating index. The buffering index obtained by the wear trial was in good agreement with the ones obtained by the apparatus. The thickness of air layer can influence the buffering capacity significantly but unnecessarily large air gap did not improve any further. When the openness was imparted to the system, buffering index decreased significantly and as the openness was increased, the differences among the specimens were gradually decreased to loose their effects at 60% and approached the value of nude. Temperature regulating index, however, showed higher value than nude which was apparently due to the still air layer. Location of the openness was more important than the sizes or numbers. Chimney effect was confirmed by locating the openness at different site of the model. The ventilation through waist to neck was 3.7-4.6 times bigger than through armholes. These results suggest that, for the designing of comfortable functional clothing or protective clothing, relative effect of the of fabric variables and the openness of the garment should considered to minimize the loss of comfort.