Supplemental Figures

This document provides another collection of numerical simulations of in-room temperature for the target space. Figures A(a)–(c) show simulation results and measured data on August 1, 2014 (Fri.), where human sensor data are incorporated via the scheme summarized in Tab. 5. POD of human sensor data on the day is also presented in Fig. B. For the simulations, the model parameters are identical to those used in Sec. 4. In Fig. A, the simulated time-series well reproduce the measured data. In addition, the thermal and fluid effects shown in Sec. 5 are also observed in the simulations. These observations clearly show that our proposed method is applicable to another situation in the target space without parameter tuning.
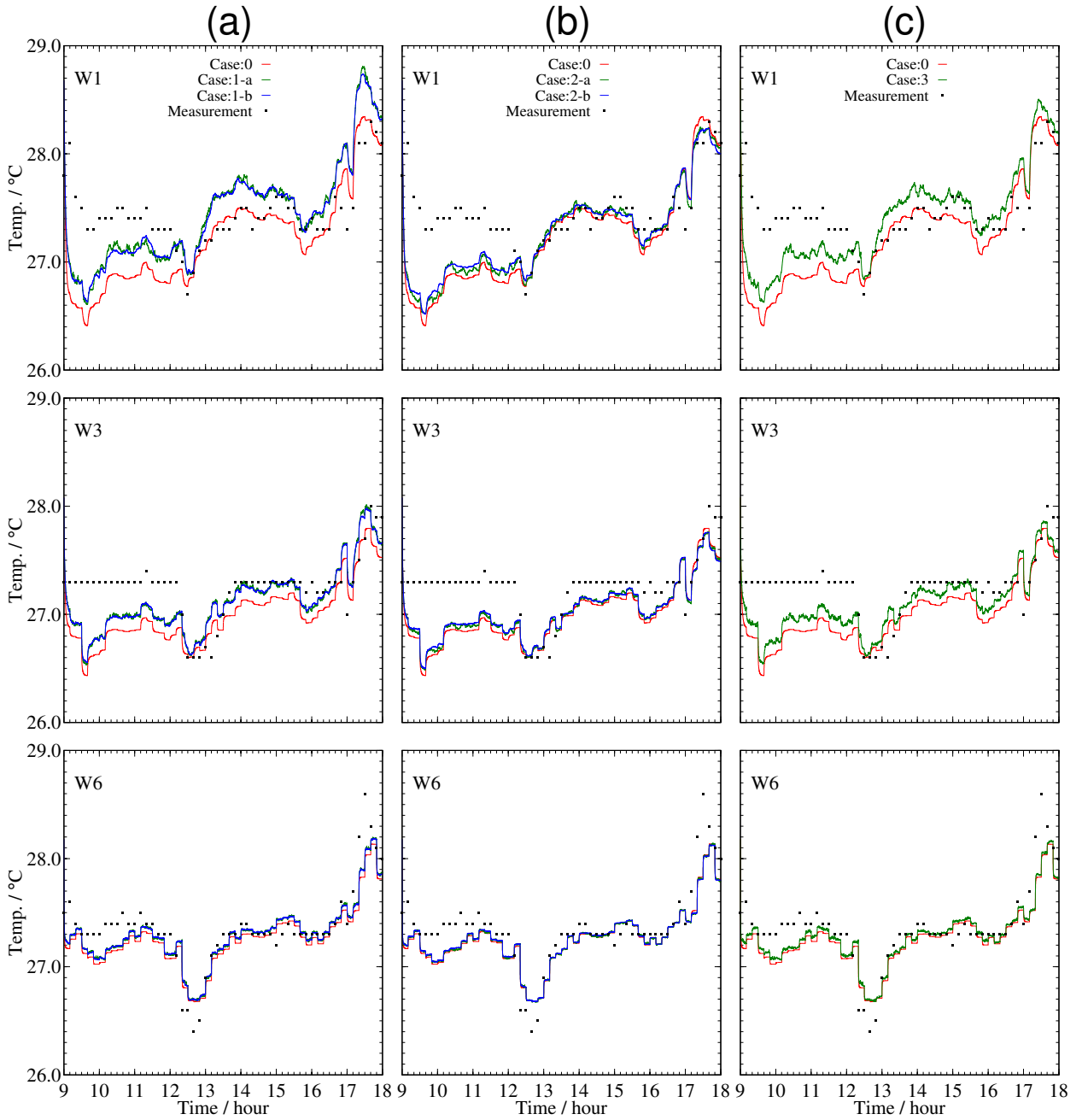

Figure A. Simulation results of in-room temperature of the target office on August 1, 2014 (Fri.; working day): (a) Case:0, Case:1-a, and Case:1-b; (b) Case:0, Case:2-a, and Case:2-b; and (c) Case:0 and Case:3.
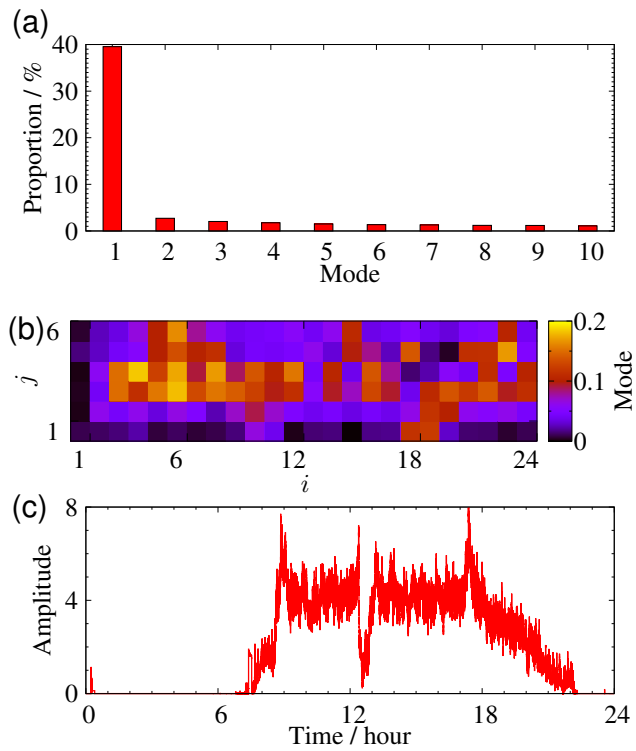
Figure B.   Modal information extracted by POD from human sensor data on August 1, 2014: (a) proportion of energy $\langle a_m^2 \rangle$ of the m-th POD mode; (b) spatial shape of the first POD mode $\boldsymbol{V}_1$; and (c) time-varying coefficient a_1.