A   Decision Diagrams for the Controllers

Figures 1–2 show the decision diagrams for controllers eco, degraded A and degraded B, respectively. Their policy behaviour is explained in the paper in Section 3.1.
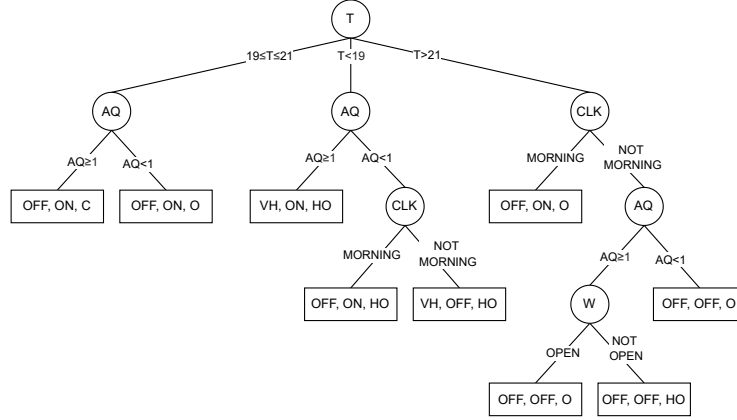

Fig. 1: Decision diagram for the eco controller, where the leaf nodes indicate the controller's decision for the status of the heater, water heater and window.
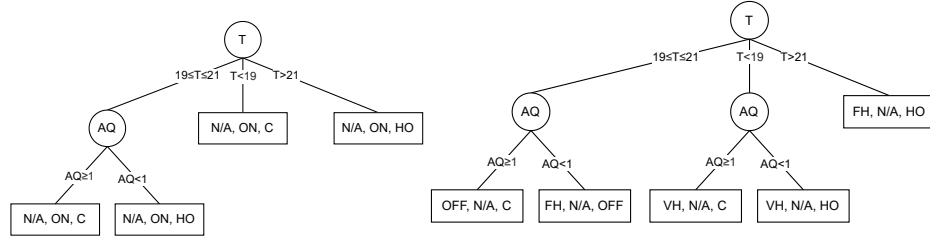

Fig. 2: Decision diagram for the degraded controllers A and B, respectively, where the leaf nodes indicate the controller's decision for the status of the heater, water heater and window. Here N/A means not applicable.

B   Maude Results for Scenarios with Failures

Figures 3 and 4 show the results of running Scenarios 2 and 3 (detailed in the paper in Section 6) respectively, when one of the heaters is failing. Note that only the configurations enhanced with the Metacontrol layer changes to the degraded controllers (degrA in Figure 3 and degrB in Figure 4).
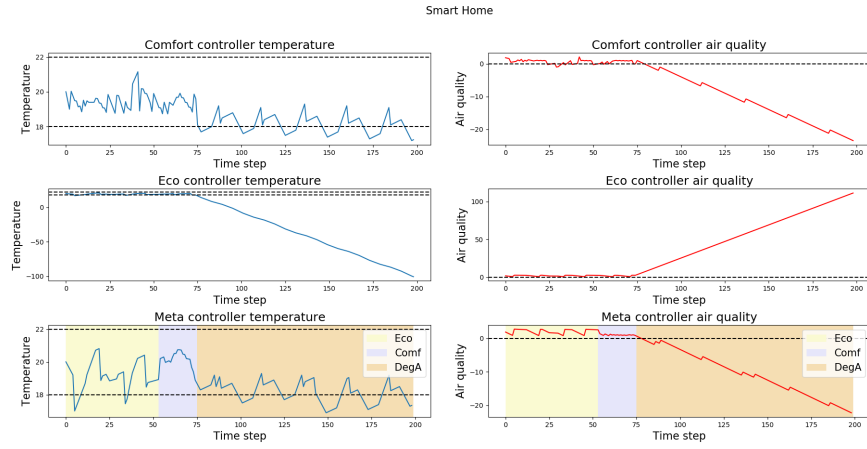
Fig. 3: Maude results for Scenario 2, when the heater breaks at time step 75.
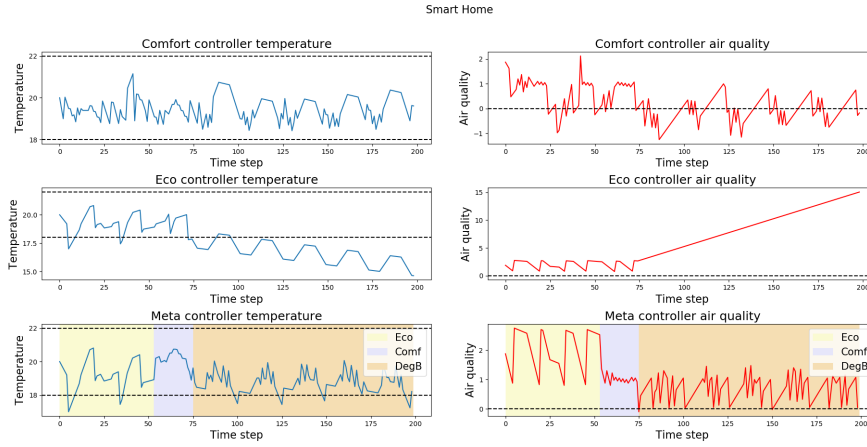

Fig. 4: Maude results for Scenario 3, when the water heater breaks at time step 75.