

Ying Xue, Li Ge and Zhao Xue, 2021, Discussion and Commentary on “Robust scheduling of multi-chiller system with chilled-water storage under hourly electricity pricing” in “Energy and Buildings” 218 (2020) 110058, appearing in *Energy and Buildings*, vol. 252, 1 December 2021, 111445.

Abstract A discussion of the “Robust scheduling of multi-chiller system with chilled-water storage under hourly electricity pricing” by Milad Sadat-Mohammadi et al. “Energy and Buildings” 218 (2020) 110058 is presented in this brief communication. A robust strategy for scheduling multi-chiller systems with chilled-water storage is provided in the mentioned work. The authors have discussed and presented the results for the optimal chiller loading considering the cooling load uncertainty in risk-neutral, risk-taker, and risk-averse strategies based on robust optimization method. RO takes a worst-case strategy to avoid ambiguity in probability distributions. Their proposed model (i.e., RO method), on the other hand, never can model risk-taking strategy in modeling the uncertainty of parameters that is cooling load in this study. Info-gap decision theory (IGDT) has a different formulation, which is an approach that deals with risk-neutral, risk-taker, and risk-averse strategies, which is formulated in this commentary. A clarification of the problem formulation and proper modeling of the problem are offered in this regard to attain the correct modeling of uncertain cooling load in energy systems. Also, based on the proposed formulation of the robust optimization approach, the assumption and simulation results achieved by their suggested model are analyzed and discussed.

Keywords Multi-chiller scheduling, Chilled-water storage, Robust optimization, Info-gap decision theory (IGDT), Risk-taker strategy, Risk-averse strategy, Discussion.