















and O<sub>2</sub> content. To overcome the foremost challenge of developing a real-time solution, we propose a new algorithmic framework that incorporates a machine learning-based prediction model, an optimization model, and an error compensation model. Experimental results based on a real boiler data validate the effectiveness and efficiency of the solution. The solution framework can be extended to other applications whose online control or optimization is constrained by the complexity of prediction and its formulation.

## ACKNOWLEDGMENTS

The authors would like to acknowledge Mr. Hongwei Xu of Beijing Palmery Technology Ltd for explaining the boiler temperature control problem and providing related dataset for experimentation.

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