Data-driven Adaptive Learning Systems and Applications

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With the development of science and technology as well as the deep integration of information and physical systems, the control systems in practical industries have become increasingly complex, thus making it difficult to establish their accurate mathematical models. In this context, the offline/online data-driven control theory has been developed rapidly. The data-driven adaptive and learning methods can describe the complex systems by establishing the dynamical relationships of the I/O data, mine the operating modes and periodic repetitive features of the systems. Then, these modes and features are used to adjust control input behavior to achieve a good control of complex systems. Therefore, data-driven adaptive and learning methods have attracted widespread attention in recent years. On the other hand, with the implementation of the national strategy for artificial intelligence (AI), how to introduce AI algorithms and technologies into data-driven adaptive and learning control has become an urgent problem to make system have stronger learning ability and adaptability for the complex control tasks under uncertain scenarios. Topics of interest of this session include, but not limited to the following fields:

❋Model-free adaptive control theory and applications

❋Iterative learning control theory and methods

❋Data-driven iterative learning control

❋AI-based data-driven adaptive learning control

❋Application of data-driven control in industrial systems

For more information on the special session, please contact Professor Ronghu Chi through email: **rhchi@163.com**.