Theme and objective:

Modern industrial systems have become increasingly intricate, and an ever-increasing trend for the reliability and safety of modern machinery has been required in modern industry due to the demands on automation, integration, and precision for industrial innovation. Therefore, Prognostic and Health Management (PHM) in complex industrial systems is of great significance to modern industry, which reduces potential downtime, improves productivity, and enables the machines to operate safely as well as economically.

The PHM of complex industrial system refers to the application of advanced and innovative PHM principles and technologies in the context of industrial systems, such as aerospace systems, manufacturing plants, power plants, and transportation infrastructure. These systems are typically large, complex, and critical to the functioning of industries and economies. However, it is challenging to effectively apply PHM technologies for complex industrial system due to several factors. First, there are usually intricate coupling effects between the different components. Second, the operating condition of the system is usually complicated. Third, it is a coupling subject that involves sensors, data acquisition, data analysis, predictive algorithms, and decision-making.

Therefore, there is a growing need to unify cutting-edge solutions for PHM of complex industrial system. This session aims to communicate related theories and technologies on emerging predictive maintenance solutions for modern industrial systems, which enables real-time monitoring, analysis, and decision support for maintenance and operational decisions.

Potential topics include but are not limited to the following:

Field:

· Data-driven predictive maintenance techniques

· Model-based predictive maintenance techniques

· System safety and reliability

· Fault-tolerant control

· Sensor technology

· Machine learning