**ICASD-23 Organised Session Proposal form**

Session title:

Dynamic analysis and vibration control of rotor systems

Theme and objective:

Rotor systems are kernel components of rotating machinery in most industrial fields, such as gas turbines, centrifugal/axial-flow compressors, aero-engines, and wind turbines. Their dynamic behaviour plays an important role in the whole system performances. With the increasing complexity of mechanical structure, the rotor systems exhibit complicated nonlinear behaviors, which seriously threatens the safety and stability of the entire system. Dynamic analysis and vibration control play a vital role in the structural design and operating maintenance of rotor systems by gaining insight into underlying characteristics and function mechanisms. However, strict performance requirements and harsh operating environments make the vibration problems of rotating machinery more prominent, which is mainly reflected in the complicated nonlinear dynamic behaviors caused by rotor–stator structural couplings and multifield coupling. This special issue will provide an opportunity for researchers to share their original research and review articles based on current findings in the field of experimental research and dynamic analysis of rotor systems.

Field:

Potential topics include but are not limited to the following:

* dynamic modeling of rotor systems;
* critical speed and vibration response calculation;
* flexible rotor dynamic balance technology;
* dynamic characteristics of various bearing-supporting rotors;
* dynamic stability of rotor systems;
* nonlinear dynamics of rotor systems;
* rotor system vibration fault and its diagnosis technology;
* active and passive vibration reduction of rotor systems;
* vibration of rotor systems under multifield coupling excitation;
* condition monitoring of rotor systems;
* fault diagnosis of rotor systems.