

## 2022 第十届中国指挥控制大会 特邀专题论坛简介

### 特邀专题名称

天基指挥控制网络

### 召集人的姓名、职称、单位和邮箱

匡麟玲 清华大学国家信息科学与技术研究中心首席研究员，  
kll@tsinghua.edu.cn

### 特邀专题简介（背景、目的、意见和内容）

指挥控制网络是为指挥控制信息提供承载服务的信息网络，可支持态势信息获取及处理、命令执行单元的指挥与控制，作为支撑指挥控制系统的基础网络平台，影响着整个指挥与控制过程的效率与收益。

天基指挥控制网络是指以天基平台为核心载体的指挥控制网络，借助卫星广域覆盖的优势，结合天基网络的全球无缝覆盖特性，实现大时空尺度的跨越协同指控需求，是现代指挥控制网络体系中重要的组成部分。天基指挥控制网络的运行与应用需要综合调度多个天基单元协同完成任务，如何编排调度各类天基单元的计算资源及天基网络的通信资源是天基指控网络中的核心问题。

围绕此问题，本特邀专题邀请以下与“天基指挥控制网络”主题相关的包含创新思想、概念、新发现、改进以及新应用的原创论文。

- 天基指挥控制网络及系统架构
- 天基边缘分布式协同计算
- 星间路由及负载均衡
- 通信资源及计算资源联合资源编排及分布式学习
- 面向服务代理的天基边缘计算及服务卸载
- 中低轨卫星的星上服务迁移问题
- 天基指挥控制网络的隐私及安全问题

## C2-China 2022

### Invited Session Summary

**Title of Session**

The Space Command and Control Network

**Name, Salutation, Affiliation and Email of Organizers**

Linling Kuang    Affiliation: Beijing National Research Center for Information Science and Technology, Tsinghua University Salutation    Principal Researcher  
Email: kll@tsinghua.edu.cn

**Details of Session (background, purpose, significance and scope)**

The command and control network is an information network that provides services for command and control information. It can obtain and process the situational information, and the command and control of command execution units. As the basic network platform supporting the command and control system, the command and control network affects the efficiency and profitability of the entire command and control process.

The space command and control network refers to a command and control network with a space platform as the core carrier. With the advantages of satellite wide coverage, combined with the global seamless coverage of the satellite network, the space command and control network as an important part of the command and control network system satisfies the need for multi-domain coordinated command and control at large space-time scales. The application of the space command and control network needs to comprehensively schedule multiple space units to complete the task. However, how to schedule the computing resources of various space units and the communication resources of the space network is a vital issue in the space command and control network.

Around this issue, this special invited topic invites the following original papers related to the theme of "The space command and control network", including innovative ideas, concepts, new discoveries, improvements, and new applications.

- The space command and control network and system architecture
- Satellite edge distributed collaborative computing

- Inter-satellite routing and load balancing
- Joint resource orchestration and distributed learning of communication resources and computing resources
- Satellite edge computing and service offloading for service agents
- Service migration for medium and low orbit satellites
- Privacy and security issues of the space command and control networks