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《广播与电视技术》是由国家广播电视总局主管,国家广播电视总局广播电视规划院主办,《广播与电视技术》编辑部编辑出版的国家级技术期刊;是发布广播电视科技政策,反映事业建设成就,介绍高新技术,交流工作经验,传播各种信息的重要媒体。本刊主要面向各级广播电视行业主管部门、各级广播电台、电视台、网络公司、发射台、微波站、卫星站、节目制作单位及电教系统,同时对企业、工矿、学校、部队等具有公共广播电视设施的管理人员、技术人员也有参考价值。

为繁荣学术交流,本刊已加入《中国学术期刊网络出版总库》、“万方数据”和“维普中文科技期刊数据库”,有权选取部分论文在本刊关联平台(如广电猎酷网 [www.lieku.cn](http://www.lieku.cn)、“广电猎酷”微信公众号等)发布,作者著作权使用费已随论文稿酬一次性给付。本刊充分尊重作者的原创成果并合理保护作者享有的权利,如作者不同意本刊之外其他形式的发布,请在来稿中声明,本刊将作适当处理。本刊及主办单位对本刊已发布作品的内容和观点不持有任何立场、不做任何承诺或保证、不承担任何责任。

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## [15] 4K超高清HDR与高清SDR同播的前期制作技术研究

4K超高清与高清电视节目同播制作备受国内很多电视台关注。本文作者单位经过多年的实践探索,基本建立了相对成熟的工艺流程,摸索出同播制作的一些规律,完成的超高清、高清节目多次获奖。本文对影响4K超高清与高清电视节目同播的前期制作关键技术问题开展研究,相关研究成果可供业界同行参考借鉴。

## [29] 广电5G中低频段网络规划方案研究

本文分析了广电5G网络的组网模式与频谱特点,基于完整的理论模型对广电700MHz NR与4.9GHz NR的覆盖性能进行了链路预算分析,分析了广电5G NR在室外连续覆盖和室内深度覆盖条件下的覆盖性能。同时,本文结合北京市地理空间数据,对北京地区广电5G网络建网标准、建站规模、选站策略等提出建议,对广电5G网络规划建设、投资决策具有参考价值。

## [41] 基于云原生架构的广播电视智能融媒云平台框架设计研究

如何建设切合广电实际的融合媒体技术体系是广电业界正在持续探索的课题。本文基于国内外最新的技术成果,结合作者多年从事广电科技工作的经验,研究了基于云原生架构的广播电视智能融媒云平台框架设计并提出了一套技术方案,有助于拓展业界同仁的思维。

## [71] 面向广电用户的流量分析调度系统设计与实现

伴随网络视频、宽带电视的快速发展,广电网络流量急剧上升,使得有线网络运营商的运营和管理成本大幅增长,如何设计一种新技术来有效疏导调度网络流量成为研究热点。本文设计并实现了面向广电用户的流量分析调度系统,在探索网络流量精细化运营方面有一定的创新性,可资参考。

## [146] 面向XR的5G关键技术研究

XR涵盖了虚拟现实(VR)、混合现实(MR)、增强现实(AR)等多种沉浸式视听技术,是实现元宇宙的关键技术之一,其对网络能力提出了更高传输速率、更低网络延时的要求。本文通过对不同网络部署场景下的XR业务容量仿真研究,分析了XR业务的5G网络部署策略,并对3GPP Rel-18中针对XR的网络增强技术演进方向进行了展望。





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## [ 15 ] **Research on the Pre-production Technology of 4K HDR and HD SDR Co-broadcasting**

The production of 4K UHD and HD TV programs co-broadcasting has attracted the attention of many domestic TV stations. After years of practice and exploration, the author of this paper has basically established a relatively mature technological process, explored some rules of co-broadcasting production, and the completed UHD and HD programs have won many awards. This paper studies the key technical issues of pre-production affecting 4K UHD and HD TV programs co-broadcasting, and the relevant research results can be used for reference by peers in the industry.

## [ 29 ] **Research on Network Planning of 5G Medium and Low Frequency Band of Radio and Television**

This paper analyzes the networking mode and spectrum characteristics of Radio and Television 5G network, the link budget of the coverage performance of Radio and Television 700MHz NR and 4.9GHz NR based on the complete theoretical model, and the coverage performance of Radio and Television 5G NR under the conditions of outdoor continuous coverage and indoor deep coverage. At the same time, based on Beijing's geospatial data, this paper puts forward some suggestions on the construction standards, station construction scale and station selection strategy of Beijing Radio and Television 5G network, which has reference value for the planning and construction of Radio and Television 5G network and investment decision-making.

## [ 41 ] **Research on the Framework Design of Broadcast Intelligent Convergence Media Cloud Platform Based on Cloud Native Architecture**

How to build an converged media technology system that meets the reality of Radio and Television is a topic that the Radio and Television industry is continuously exploring. Based on the latest technical achievements at home and abroad, combined with the author's experience in Radio and Television science and technology for many years, this paper studies the framework design of broadcast intelligent convergence media cloud platform based on the cloud native architecture and proposes a set of technical solutions, which is helpful to expand the thinking of colleagues in the industry.

## [ 71 ] **Design and Implementation of Traffic Analysis and Scheduling System for Radio and Television Users**

With the rapid development of network video and broadband TV, the traffic of Radio and Television networks has risen sharply, which has greatly increased the operation and management costs of cable network operators. How to design a new technology to effectively dredge and dispatch network traffic has become a research hotspot. This paper designs and implements a traffic analysis and scheduling system for Radio and Television users, which is innovative in exploring the fine operation of network traffic and can be consulted.

## [ 146 ] **Research on Key Technologies of 5G for XR**

XR covers a variety of immersive audio-visual technologies such as virtual reality (VR), mixed reality (MR) and augmented reality (AR), and is one of the key technologies to realize the meta universe. It requires higher transmission rate and lower network delay for network capacity. This paper analyzes the 5G network deployment strategy of XR service through the simulation of XR service capacity under different network deployment scenarios, and looks forward to the evolution direction of network enhancement technology for XR in 3GPP Rel-18.