

### 有限尺度汇聚流带宽规划研究

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## Research on Finite-timescale Bandwidth Provisioning for Aggregated Traffic

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摘要

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**摘要** 互联网分组传输具有尽力而为的服务特性, 基于目前复杂的接入网络结构难以满足中国下一代广播电视网中具有长相关特性实时互动流媒体流量传输的要求。该文根据统计复用框架下服务质量保障策略, 分析了有限时间尺度集汇聚流媒体流量带宽规划的有效性; 并根据泊松帕雷多突发过程流量模型, 给出了基于链路瓶颈造成流量突发程度——粗糙度的带宽规划方法。进一步分析表明汇聚流量自相似程度由具有较强粗糙度的子流决定, 采用大规模接入汇聚的方式可以有效地避免由于链路瓶颈造成的突发, 基于流量粗糙度的有限尺度汇聚流带宽规划方法可为下一代广播电视网的部署实施提供技术支持。

**关键词:** 中国下一代广播电视网 带宽规划 粗糙度 时间尺度

**Abstract:** Because of the characteristics of Internet best-effort and the complexity of the access network structure, it is difficult to meet the quality of services such as long range depend real-time interaction streaming media for Next Generation Broadcasting (NGB) network. According to statistical multiplexing of the quality of service guarantee policy framework, availability of finite-timescale bandwidth provisioning for streaming media traffic with self-similarity is proved. Furthermore, depending on the Poisson Pareto burst process traffic model, a bandwidth provisioning method is proposed based on traffic roughness that describes the burst of the traffic. And it is analyzed that the self-similarity of the aggregated traffic is dominated by the sub-traffic. So the burst can be reduced by the large scale aggregation of the traffic, and the finite-timescale bandwidth provisioning is critical for the deployment of Next Generation Broadcasting (NGB) network.

**Keywords:** Next Generation Broadcasting (NGB) network Bandwidth provision Traffic roughness Time scale

Received 2010-04-10;

本文基金:

国家863计划项目(2008AA01A323)资助课题

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引用本文:

赵昕, 邬江兴, 兰巨龙.有限尺度汇聚流带宽规划研究[J] 电子与信息学报, 2011,V33(2): 255-259

Zhao Xin, Wu Jiang-Xing, Lan Ju-Long.Research on Finite-timescale Bandwidth Provisioning for Aggregated Traffic[J] , 2011,V33(2): 255-259

链接本文:

http://jeit.ie.ac.cn/CN/10.3724/SP.J.1146.2010.00398 或 http://jeit.ie.ac.cn/CN/Y2011/V33/I2/255

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