

# Temporal Correlation of Interference and Outage in Mobile Networks over One-Dimensional Finite Regions

## ABSTRACT

The performance of wireless networks is limited by interference. Interference is correlated over time when there are temporal correlations in the propagation channel, the user traffic and the user location. Interference correlation is directly related to the correlation of outage and because of that, it also affects other network performance metrics, e.g., the temporal diversity gain, the multi-hop delay, etc., thus becoming essential in the design of routing protocols, retransmission and Medium Access Control (MAC) schemes. The temporal correlation of interference has received some attention in the literature, however, under the assumption of infinite networks, where the locations of interferers are modeled by a Poisson Point Process (PPP) in the infinite plane. Also, the impact of mobility on the interference correlation has been studied for mobility models which do not introduce correlation in the locations of a user over.

## EXISTING SYSTEM

In Existing System, networks have finite boundaries and the concept of a typical receiver which is placed at the origin and where the network performance is assessed is not always realistic. This issue has already been pointed out, where single-snapshot analysis of interference and outage are carried out at different locations. For a Poisson network deployed over a convex domain, the receivers close to the boundaries experience more outage due to isolation, but less due to interference. The location of the receiver becomes more important in non-uniform deployment, where the interference would naturally vary more.

## DIS ADVANTAGES

- It also affects other network performance.
- Network performance is assessed is not always realistic.

## PROPOSED SYSTEM

In Proposed System, we show how to incorporate correlated user mobility into the interference and outage correlation models. We use the random waypoint mobility model over a bounded one-dimensional domain as an example model inducing correlation, and we calculate its displacement law at different locations. Based on that, we illustrate that the temporal correlations of interference and outage are indeed location-dependent, being lower close to the centre of the domain, where the level of mobility is higher than near the boundary. Close to the boundary, more time is also needed to see uncorrelated interference at the receiver. Our findings suggest that an accurate description of the mobility pattern is important, because it leads to more accurate understanding/modeling of interference and receiver performance.

## ADVANTAGES

- It results in higher diversity gains.
- Within a single time slot, the interference correlation reduces rapidly.

## SYSTEM REQUIREMENTS

### H/W System Configuration:-

Processor	-	Pentium –III
RAM	-	256 MB (min)
Hard Disk	-	20 GB
Key Board	-	Standard Windows Keyboard
Mouse	-	Two or Three Button Mouse
Monitor	-	SVGA

### S/W System Configuration:-

Operating System	:	Windows95/98/2000/XP
Application Server	:	Tomcat5.0/6.X

Front End : HTML, Jsp  
Scripts : JavaScript.  
Server side Script : Java Server Pages.  
Database : MySQL 5.0  
Database Connectivity : JDBC