

RAYLEIGH PDF/CDF ANALYSIS FOR A FAST FADING MOBILE CHANNEL

V. LAVANYA & G. SASIBHUSHANA RAO

Department of Electronics and Communication, Andhra University
College of Engineering, Visakhapatnam, Andhra Pradesh, India

ABSTRACT

In densely built-up areas, the mobile communication signal propagate from the base station and arrives at the mobile station(or mobile phone) as a multitude of partial waves from different directions. This is known as multipath propagation. This effect gives rise to multipath fading. Due to this, received signal strength decreases and sometimes unable to recognise. So characterisation and modelling of wireless channel is important. The received signal strength in terms of power is measured using RF recorder for analysis at the mobile station at certain time intervals and the signal (in dBm) assumed to be received in multipath environment and is composed of fast fading caused by local multipath propagation and slow fading due to shadowing. In this paper, the real time mobile data is analyzed by separating fast fading components using moving average filter and then approximation of its and probability distribution functions (PDF) and cumulative distributions(CDF) are analysed.

KEYWORDS: *Multipath, Received Signal Strength, Rayleigh Distribution, Rayleigh Fading, Lognormal Distribution*

Received: Jan 22, 2016; **Accepted:** Jan 25, 2016; **Published:** Feb 03, 2016; **Paper Id.:** TJPRC: IJPSMJUN20166