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| Title | Fundamental Capacity Analysis for Identically Independently Distributed Nakagami-q Fading Wireless Communication | | |
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| Published Journal Name | International Journal of Advanced Computer Science and Applications | | |
| Type of Publication | Journal | | |
| Volume | 11 | Issue | 9 |
| Publisher | The Science and Information Organization | | |
| Publication Date | October 1, 2020 | | |
| ISSN | 2156-5570 | | |
| DOI | 10.14569/IJACSA.2020.0110978 | | |
| URL | https://thesai.org/Publications/ViewPaper?Volume=11&Issue=9&Code=IJACSA&SerialNo=78 | | |
| Other Related Info. | Page 659 - 663 | | |
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| Abstract |  |
| With the advancement in technology, decent transfer rate of data for fast communication is an exigency. Different distributions on different wireless communication channels have been used previously to model them and to do performance analysis on the systems. In this work, capacity analysis of identically independently distributed Nakagami-q fading single-input multiple-output (SIMO) wireless communication is presented. The derivation of channel capacity with the analytical solution have been conducted using small limit argument approximation. Where the small limit argument approximation corresponds to the low signal-to-noise ratio (SNR) regime. SIMO channel capacity behavior with respect to number of receiver antennas and with respect to SNR have been explored in depth. The improvement of capacity is depicted rigorously. It has been found that using Nakagami-q distribution, capacity of the system increases as number of receiver antenna increases. It is also found that the capacity of this SIMO wireless system can be further improved through changing of certain parameters. | |