

1. Record Nr.	UNINA9910299490403321
Autore	Lu Ning
Titolo	Capacity analysis of vehicular communication networks // Ning Lu, Xuemin (Sherman) Shen
Pubbl/distr/stampa	New York : , : Springer, , 2014
ISBN	1-4614-8397-2
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (ix, 82 pages) : illustrations (some color)
Collana	SpringerBriefs in Electrical and Computer Engineering, , 2191-8112
Disciplina	004
Soggetti	Vehicular ad hoc networks (Computer networks) Mobile computing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"ISSN: 2191-8112."
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Capacity Scaling Laws of Wireless Networks -- Unicast Capacity of Vehicular Networks with Socialized Mobility -- Downlink Capacity of Vehicular Networks with Access Infrastructure -- Conclusions and Future Directions.
Sommario/riassunto	This SpringerBrief focuses on the network capacity analysis of VANETs, a key topic as fundamental guidance on design and deployment of VANETs is very limited. Moreover, unique characteristics of VANETs impose distinguished challenges on such an investigation. This SpringerBrief first introduces capacity scaling laws for wireless networks and briefly reviews the prior arts in deriving the capacity of VANETs. It then studies the unicast capacity considering the socialized mobility model of VANETs. With vehicles communicating based on a two-hop relaying scheme, the unicast capacity bound is derived and can be applied to predict the throughput of real-world scenarios of VANETs. The downlink capacity of VANETs is also investigated in which access infrastructure is deployed to provide pervasive Internet access to vehicles. Different alternatives of wireless access infrastructure are considered. A lower bound of downlink capacity is derived for each type of access infrastructure. The last section of this book presents a case study based on a perfect city grid to examine the capacity-cost trade-offs of different deployments since the deployment costs of different access infrastructure are highly variable.

