



### IEEE Journal Papers (under review)

(2561 citations)

<http://www.sce.carleton.ca/faculty/yanikomeroglu/cv/publications.pdf>

N. Cherif, W. Jaafar, H. Yanikomeroglu, A. Yongacoglu, “**3D Aerial highways: The key enabler of the retail industry transformation**”, under review in *IEEE Communications Magazine*.

T. Darwish, G. Karabulut Kurt, H. Yanikomeroglu, G. Senarath, P. Zhu, “**A vision of self-evolving network management for future intelligent vertical HetNet**”, under review in *IEEE Wireless Communications Magazine*.

W. Jaafar, S. Naser, S. Muhaidat, P.C. Sofotasios, H Yanikomeroglu, “**Multiple access in aerial networks: From orthogonal and non-orthogonal to rate-splitting**”, under review in *IEEE Open Journal of Vehicular Technology*. (02)

G. Kurt, M.G. Khoshkholgh, S. Alfattani, A. Ibrahim, T.S.J. Darwish, Md S. Alam, H. Yanikomeroglu, A. Yongacoglu, “**A vision and framework for the high altitude platform station (HAPS) networks of the future**”, under review in *IEEE Communications Surveys and Tutorials*. (01)

E. Erdogan, I. Altunbas, N. Kabaoglu, H. Yanikomeroglu, “**A cognitive radio enabled RF/FSO communication model for aerial relay networks: Possible configurations and opportunities**”, under review in *IEEE Open Journal of Vehicular Technology*.

A.U. Chaudhry, H. Yanikomeroglu, “**Free space optics for next-generation satellite networks**”, under review in *IEEE Consumer Electronics Magazine*.



### IEEE Journal Papers (under review)

K. Tekbiyik, G. Karabulut Kurt, A.R. Ekti, A. Gorcin, H. Yanikomeroglu, “**Reconfigurable intelligent surface empowered terahertz communication for LEO satellite networks**”, under review in *IEEE Journal on Selected Areas in Communications*.

M.S. Alam, G. Karabulut Kurt, H. Yanikomeroglu, P. Zhu, N.-D. Dao, “**High altitude platform station based super macro base station (HAPS-SMBS) constellations**”, under review in *IEEE Communications Magazine*.

W. Jaafar, H. Yanikomeroglu, “**Dynamics of laser-charged UAVs: A battery perspective**”, under review in *IEEE Internet of Things Journal*. (01)

S. Alfattani, W. Jaafar, Y. Hmamouche, H. Yanikomeroglu, A. Yongacoglu, N.D. Dao, P. Zhu, “**Aerial platforms with reconfigurable smart surfaces for 5G and beyond**”, under review in *IEEE Communications Magazine*. (01)

W, Jaafar, S. Naser, S. Muhaidat, P.C. Sofotasios, H. Yanikomeroglu, “**On the downlink performance of RSMA-based UAV communications**”, under review in *IEEE Transactions on Vehicular Technology*.

N. Cherif, M. Alzenad, H. Yanikomeroglu, A. Yongacoglu, “**Downlink coverage and rate analysis of an aerial user in vertical heterogeneous networks (VHetNets)**”, under review in *IEEE Transactions on Wireless Communications*. (07)

## IEEE Journal Papers (2020)

K. Tekbiyik, A.R. Ekti, G. Karabulut Kurt, A. Gorcin, H. Yanikomeroglu, “A holistic investigation on terahertz propagation and channel modeling toward vertical heterogeneous networks”, *IEEE Communications Magazine*.

E. Kalantari, H. Yanikomeroglu, A. Yongacoglu, “Wireless networks with cache-enabled and backhaul-limited aerial base stations”, to appear in *IEEE Transactions on Wireless Communications*.

O. Abbasi, H. Yanikomeroglu, A. Ebrahimi, N. Mokari, “Trajectory design and power allocation for drone-assisted NR-V2X network with dynamic NOMA/OMA”, to appear in *IEEE Trans Wireless Commun*.

A. Azizi, S. Parsaeefard, M.R. Javan, N. Mokari, H. Yanikomeroglu, “Profit maximization in 5G+ with heterogeneous aerial and ground base stations”, *IEEE Transactions on Mobile Computing*, Oct 2020. (01)

C.T. Cicek, H. Gultekin, B. Tavli, H. Yanikomeroglu, “Backhaul-aware optimization of a UAV base station location and bandwidth allocation for profit maximization”, *IEEE Access*, 2020. (10)

H. Vaezy, M.S.H. Abad, O. Ercetin, H. Yanikomeroglu, M.J. Omid, M.M. Naghsh, “Beamforming for maximal coverage in mmWave drones: A reinforcement learning approach”, *IEEE Communications Letters*, May 2020. (02)

A. Farajzadeh, O. Ercetin, H. Yanikomeroglu, “Mobility-assisted over-the-air computation for backscatter sensor networks”, *IEEE Wireless Communications Letters*, May 2020. (01)

S. Enayati, H. Saeedi, H. Pishro-Nik, H. Yanikomeroglu, “Optimal altitude selection of aerial base stations to maximize coverage and energy harvesting probabilities: A stochastic geometry analysis”, *IEEE Transactions on Vehicular Communications*, Feb 2020.



### IEEE Journal Papers (2019)

M. Alzenad, H. Yanikomeroglu, “**Coverage and rate analysis for vertical heterogeneous networks (VHetNets)**”, *IEEE Transactions on Wireless Communications*, Dec 2019. (12)

S. Enayati, H. Saeedi, H. Pishro-Nik, H. Yanikomeroglu, “**Moving aerial base station networks: Stochastic geometry analysis and design perspective**”, *IEEE Trans. Wireless Communications*, Jun 2019. (23)

S. Andreev, V. Petrov, M. Dohler, H. Yanikomeroglu, “**Future of ultra-dense networks beyond 5G: Harnessing heterogeneous moving cells**”, *IEEE Communications Magazine*, Jun 2019. (52)

X. Zhou, J. Guo, S. Durrani, H. Yanikomeroglu, “**Underlay drone cell for temporary events: Impact of drone height and aerial channel environments**”, *IEEE Internet of Things Journal*, Apr 2019. (17)

I. Bor-Yaliniz, M. Salem, G. Senerath, H. Yanikomeroglu, “**Is 5G ready for drones?: A look into contemporary and prospective wireless networks from a standardization perspective**”, *IEEE Wireless Communications Magazine*, Feb 2019. (33)

I. Bor-Yaliniz, A. El-Keyi, H. Yanikomeroglu, “**Spatial configuration of agile wireless networks with drone-BSs and user-in-the-loop**”, *IEEE Transactions on Wireless Communications*, Feb 2019. (22)



### IEEE Journal Papers (2016–2018)

X. Cao, P. Yang, M. Alzenad, X. Xi, D. Wu, H. Yanikomeroglu, “**Airborne communication networks: A survey**”, *IEEE Journal on Selected Areas in Communications*, Sep 2018. (88)

I. Bor-Yaliniz, S.S. Szyszkowicz, H. Yanikomeroglu, “**Environment aware drone-base-station placements in modern metropolitans**”, *IEEE Wireless Communications Letters*, Jun 2018. (31)

F. Lagum, I. Bor-Yaliniz, H. Yanikomeroglu, “**Strategic densification with UAV-BSs for cellular networks**”, *IEEE Wireless Communications Letters*, Jun 2018. (57)

M. Alzenad, A. El-Keyi, H. Yanikomeroglu, “**3D placement of an unmanned aerial vehicle BS for maximum coverage of users with different QoS requirements**”, *IEEE Wireless Commun. Letters*, Feb 2018. (183)

M. Alzenad, M.Z. Shakir, H. Yanikomeroglu, M.-S. Alouini, “**FSO-based vertical backhaul/fronthaul framework for 5G+ wireless networks**”, *IEEE Communications Magazine*, Jan 2018. (194)

M. Alzenad, A. El-Keyi, F. Lagum, H. Yanikomeroglu, “**3D placement of unmanned aerial vehicle base station (UAV-BS) for energy-efficient maximal coverage**”, *IEEE Wireless Commun. Lett.*, Aug 2017. (388)

I. Bor-Yaliniz, H. Yanikomeroglu, “**The new frontier in RAN heterogeneity: Multi-tier drone-cells**”, *IEEE Communications Magazine*, Nov 2016. (310)



### IEEE Conference Papers (2020–2021)

N. Adam, C. Tapparello, W. Heinzelman, H. Yanikomeroglu, “**Placement optimization of multiple UAV base stations**”, under review in *IEEE ICC 2021*.

N. Cherif, W. Jaafar, H. Yanikomeroglu, A. Yongacoglu, “**On the optimal 3D placement of a UAV base station for maximal coverage of UAV users**”, *IEEE Globecom 2020*. (02)

O. Ghdiri, W. Jaafar, S. Alfattani, J. Ben Abderrazak, H. Yanikomeroglu, “**Energy-efficient multi-UAV data collection for IoT networks with time deadlines**”, *IEEE Globecom 2020*.

O.A. Topal, G. Karabulut Kurt, H. Yanikomeroglu, “**Securing the inter-satellite links: Doppler frequency shift based physical layer key generation**”, *IEEE WiSEE 2020*.

O. Abbasi, H. Yanikomeroglu, A. Ebrahimi, N. Mokari, “**Dynamic NOMA/OMA for V2X network with UAV relaying**”, *IEEE VTC2020-Fall Workshops*.

I. Bor-Yaliniz, G. Senarath, H. Yanikomeroglu, “**Aerial access nodes and virtual wireless access: A look into integration strategies**”, *IEEE ICC 2020*.

## IEEE Conference Papers (2019)

S. Alfattani, W. Jaafar, H. Yanikomeroglu, A. Yongacoglu, “Multi-UAV data collection architecture for wireless sensor networks”, *IEEE Globecom 2019*. (02)

N. Cherif, M. Alzenad, H. Yanikomeroglu, A. Yongacoglu, “Downlink coverage analysis of an aerial user in vertical heterogeneous networks”, *IEEE Globecom 2019*. (02)

R. Ghanavi, M. Sabbaghian, H. Yanikomeroglu, A. Yongacoglu, “Q-Learning based aerial base station placement for fairness enhancement in mobile networks”, *IEEE GlobalSIP 2019*.

R. Ozdag, H. Yanikomeroglu, “A new meta-heuristic approach for 3D placement of multiple unmanned aerial vehicle base stations in wireless networks”, *DMS 2019*.

M. Khoshkholgh, K. Navaie, H. Yanikomeroglu, V.C.M. Leung, K.G. Shin, “How do non-ideal UAV antennas affect air-to-ground communications?”, *IEEE ICC 2019*. (04)

A. Farajzadeh, O. Ercetin, H. Yanikomeroglu, “UAV data collection over NOMA backscatter networks: UAV altitude and trajectory optimization”, *IEEE ICC 2019*. (13)

M. Khoshkholgh, K. Navaie, H. Yanikomeroglu, V.C.M. Leung, K.G. Shin, “Coverage performance in aerial-terrestrial HetNets”, *IEEE VTC2019-Spring*. (03)

M. Khoshkholgh, K. Navaie, V.C.M. Leung, H. Yanikomeroglu, “Randomized caching in cooperative UAV-enabled fog-RAN”, *IEEE WCNC 2019*. (05)

C.T. Cicek, H. Gultekin, B. Tavli, H. Yanikomeroglu, “UAV Base station location optimization for next generation wireless networks: Overview and future research directions”, *IEEE UVS-Oman 2019*. (26)



## IEEE Conference Papers (2016–2018)

M. Alzenad, H. Yanikomeroglu, “Coverage and rate analysis for downlink unmanned aerial vehicles base stations with LoS/NLoS propagation”, *IEEE Globecom Workshops 2018*. (20)

H. Yanikomeroglu, “Integrated terrestrial/non-terrestrial 6G networks for ubiquitous 3D super-connectivity”, Invited Paper, *ACM Int’l Conf. Modeling, Analysis, and Simulation of Wireless and Mobile Systems (MSWIM) 2018*. (08)

X. Zhou, J. Guo, S. Durrani, H. Yanikomeroglu, “Uplink coverage performance of an underlay drone cell for temporary events”, Invited Paper, *IEEE Int’l Conf. in Communications Workshops (ICCW) 2018*. (21)

M. Gapeyenko, I. Bor-Yaliniz, S. Andreev, H. Yanikomeroglu, Y. Koucheryavy, “Effect of blockage in deploying mmWave drone base stations for beyond-5G networks”, Invited Paper, *IEEE ICCW 2018*. (22)

R. Ghanavi, E. Kalantari, M. Sabbaghian, H. Yanikomeroglu, A. Yongacoglu, “Efficient 3D aerial base station considering users mobility by reinforcement learning”, *IEEE WCNC 2018*. (53)

E. Kalantari, I. Bor-Yaliniz, A. Yongacoglu, H. Yanikomeroglu, “User association and bandwidth allocation for terrestrial and aerial base stations with backhaul considerations”, *IEEE PIMRC 2017*. (67)

E. Kalantari, M.Z. Shakir, H. Yanikomeroglu, A. Yongacoglu, “Backhaul-aware robust 3D drone placement in 5G+ wireless networks”, *IEEE Int’l Conf. in Commun. Workshops (ICCW) 2017*. (157)

E. Kalantari, H. Yanikomeroglu, A. Yongacoglu, “On the number and 3D placement of drone base stations in wireless cellular networks”, *IEEE Vehicular Technology Conference (VTC2016-Fall)*. (222)

I. Bor Yaliniz, A. El-Keyi, H. Yanikomeroglu, “Efficient 3-D placement of an aerial base station in next generation cellular networks”, *IEEE Int’l Conf. in Communications (ICC) 2016*. (500)



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