

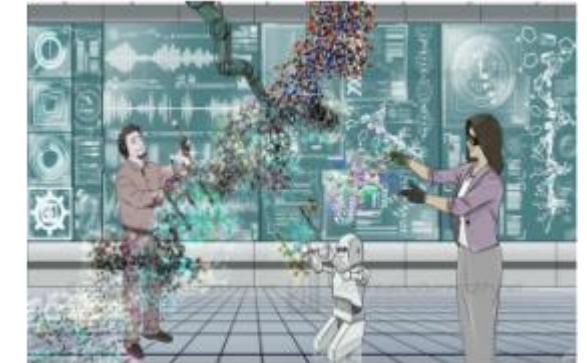
NYU WIRELESS UPDATES

WEBINAR

SEPTEMBER 2016

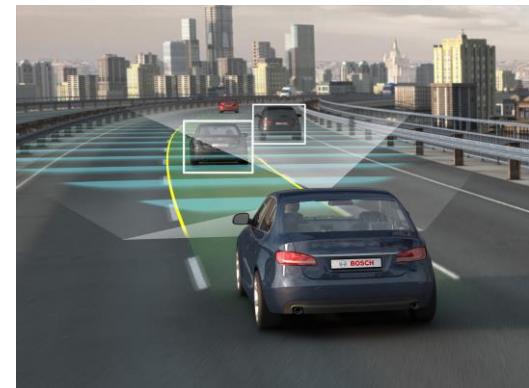
Research Directions FY2017

- ❑ Maintain deep research in core mmWave
 - Devices, channel models, system & network design



- ❑ Immersive / 360 video and augmented reality
 - Partners in NYU Game Center and NYU-X labs

- ❑ Vehicular technology
 - V2V and V2X
 - Automated driving
 - Seeking partnership with Toyota and others



NYU-X lab: <http://www.nyu-x.org/>

NSF Testbed Initiative

- ❑ NSF to spend \$400 Million in advancing 5G wireless
 - Significant focus on mmWave
- ❑ Goal to fund 4 to 5 key testbed sites
- ❑ NYU collaborating with NYC to become one key site
 - Strong industrial connections
 - Leader in mmWave and 5G in the US
 - Leverage NYC infrastructure, including Link NYC
- ❑ Testbed to showcase core technology + novel applications
 - NYU bid will focus on vehicular, smart cities, health, ...
- ❑ https://www.nsf.gov/news/news_summ.jsp?cntn_id=139179



New Research Web Pages

RESEARCH

NYU WIRELESS's research cover a wide range of problems in the development of next generation wireless technology - from basic devices to networks to applications. A key focus is in millimeter wave (mmWave) systems operating in the high frequency bands above 10 GHz. Due to the large available bandwidths in these frequencies, these bands have the potential to provide orders of magnitude greater data rates than today's wireless systems working in the highly congested narrow bands below 3 GHz.

Our current research focus areas are:

PROTOTYPING & SIMULATION SOFTWARE
NYUSIM: 5G Channel Model Simulator
Propagation database
mmWave ns3 simulation module
Channel sounder
MmWave phased array based prototyping

View Research

MMWAVE CHANNEL MODELING
Dynamic channel models and blockage
Macro-diversity and COMP characterization
Long-range models
Spatial channel estimation & beam tracking

View Research

MMWAVE CELLULAR SYSTEM DESIGN
Ultra low latency MAC layer design
Spectrum sharing

View Research

MEDICAL
mmWave Health Effects
Wireless Hospitals

View Research

HIGH-SPEED NETWORKING, & APPLICATIONS
Congestion control in mmWave links
Multi-path TCP for mmWave macro-diversity
Enabling High-throughput Low-delay Applications

View Research

CIRCUITS & DEVICES
Sub-THz materials
Low-power fully digital transceivers

View Research

PUBLICATIONS

Please use the table below to browse the catalog of NYU WIRELESS publications. You can search for a specific title, author, or keyword below. Click on the table headers to sort publications by that category.

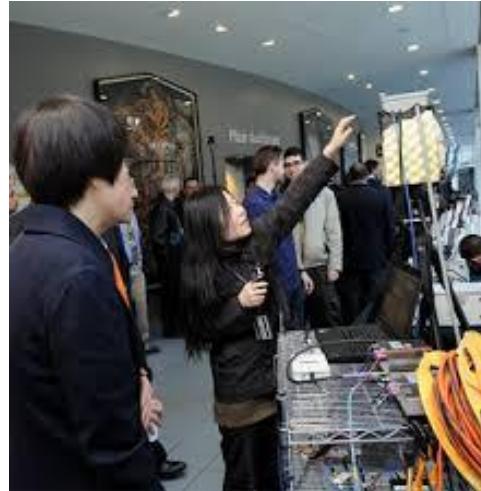
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Citation			
M. Rebato, M. Mezzavilla, S. Rangan, M. Zorzi, "The Potential of Resource Sharing in 5G Millimeter-Wave Bands", under review for IEEE Communications Magazine.			Spectrum Sharing
R. Ford, F. Gómez-Cuba, M. Mezzavilla, S. Rangan, "Dynamic Time-domain Duplexing for Self-backhauled Millimeter Wave Cellular Networks", IEEE ICC BackNets, to appear 2015.			Millimeter Design
S. Dutta, M. Mezzavilla, R. Ford, M. Zhang, S. Rangan, M. Zorzi, "Frame Structure Design and Analysis for Millimeter Wave Cellular OFDM", submitted to IEEE Transaction on Wireless Communications.			Millimeter Design
M. Rebato, M. Mezzavilla, S. Rangan, M. Zorzi, "Resource Sharing in 5G mmWave Cellular Networks", accepted at IEEE INFOCOM mmWave Networking Workshop, April 2016, San Francisco.			Spectrum Sharing
M. Giordani, M. Mezzavilla, M. Zorzi, "Initial Access in 5G mm-Wave Cellular Networks", to appear in IEEE COMMAG.			
M. Mezzavilla, S. Goyal, S. Panwar, S. Rangan, M. Zorzi, "An MDP Model for Optimal Handover Decisions in mmWave Cellular Networks", accepted at EuCNC 2016.			
S. Dutta, M. Mezzavilla, R. Ford, M. Zhang, S. Rangan, M. Zorzi, "Frame Structure Design and Analysis for Millimeter Wave Cellular OFDM", submitted to IEEE Transaction on Wireless Communications.			Millimeter Design

Save the Date!

□ Recruiting day and open house

- Friday, Jan 27, 2017
- Meet students for internships and full-time
- See latest research



□ Brooklyn 5G Summit April 19-21, 2017

- All affiliates invited
- Bigger space for demos, talks, ...

